THE

CHYRURGEONS

Store-Houſe:

Furniſhed with Forty three

TABLES Cut in BRASS,

IN WHICH

Are all ſorts of INSTRUMENTS, both Antient and Modern; uſeful to the performance of all Manual Opperations, with an exact Deſcription of every INSTRUMENT.

Together with a hundred Choiſe OBSERVATIONS of famous CURES PERFORMED.

With three Indexes. 1 of the INSTRUMENTS. 2 of CURES performed, and 3 of Things Remarkable.

Written by Johannes Scultetus, *a famous Phyſitian, and Chyrurgion of* Ulme *in* Suevia.

And faithfully Engliſhed. By E. B.

LONDON,
Printed for *John Starkey*, at the *Miter* in *Fleet ſtreet*, near *Temple-Bar*. 1674.

8° B. 45. Med.

TO THE

Moſt Magnificent, Moſt Noble, Moſt Powerful, Moſt Knowing, and Moſt Prudent, The *Sheriffs*, *Conſuls*, and *Senatours* of the Renowned *Imperial Republick* of *ULME*.

My ever Honoured LORDS *and* PATRONS, *all Obſervance and Happineſs.*

MOST MAGNIFICENT, &c.

WHſoever doth behold clearly with the eyes of his Underſtanding the wonderful works of the Eternal Moderatour, and Governour of all things, he is immediately delighted with the ſweetneſs of that Contemplation; and the more he is delighted, the farther he ſearcheth into them. By ſearching daily

he learns the more, and is the more ready and willing to conſecrate his knowledge to the publick good; and by the help of drawing and engraving to tranſmit his experience to all poſterity. The Antients diſcovered much, and yet left much more ſtill to be diſcovered. My Uncle, of Pious Memory, firſt led by the admirable direction of God, devoted his mind to the ſtudy of Phyſick from his youth, and without vanity, I may affirm, that he attained to no ſmall glory, in the happy performance of Chyrurgical Operations: *and whilſt that he choſe that ſtupendious Miracle of Nature, the Fabrick of Mans Body to be his Subject, and did contemplate it with great delight; he collected every day new Obſervations, which he committed to Writing intending one day, after having reviſed them, to make them Publick; and I wiſh to God a milder Fate had ſpared his Life for ſome years, that thoſe Productions of his might by himſelf in their due time have been brought forth into the world; But God diſpoſing it otherwiſe, upon his untimely departure out of this Life; and dying inteſtate, I came to be one of his Heirs; and having been ever obſervant to him, and of the ſame Profeſſion, I thought it would be a high offence, to involve, as it were, in Cimmerian darkneſs the works of him, to whom I owe my education; and as his Heir I hold my ſelf obliged to perform the deſires of the deceaſed, which I hope in this work, I have in ſome meaſure ſatisfied: as alſo the deſires of friends, who, by Letters, have earneſtly requeſted the Publication of it, but the chief motion which hath induced me to ſet it forth is, that I might Dedicate it to you my moſt hono-*

honored, &c. Finding it by divers Writings which he left behind him, that it was the intention of my Unkle, if he had continued alive, to Conſecrate this work to your Lordſhips; and therefore, I ſhould be very much to blame, if I refuſed too perform this ſervice in honour to his pious aſhes.

But that which hath raviſhed my Unkle and my ſelf with aamiration in your fair City of Ulme is, your ſtill more fair order of the Senatours; which in the three Eſtates, Eccleſiaſtical, Civil, and Military, flouriſheth in the higheſt degree of honour; and as the underſtanding in the mind, in the body the eye, and in the eye the pupill, or ſight: ſo in Ulme, the eye of Suevia. The Senators Order, as the pupill, and ſight of it directeth all things: your moſt excellent Common-wealth, is free from putting an imperious yoke upon Mens conſciences: your Court is free from flattery, and all impartiallity: your Walls are free from forreign Forces; and in your free City, ſpeech, and all things elſe are free: who therefore hath not the ſame Veneration for you, Fathers of your Country, as he hath for the Country it ſelf? and who doth not teſtifie all manner of acknowledgement and ſubmiſſion to you. Theſe thirty years warrs which Chriſtian hath waged againſt Chriſtian: under the wounds of which, almoſt all Germany ſtill groaneth, by your directions, under God, have not ſhaken our Walls, have not violated our Temples, and Altars, and have not raviſhed our Virgins; all theſe your moſt conſtant care, your inbard ſedulity, and your high prudence, have preſerved: you have vouchſafed to allow both my

Unkle

Vnkle, and my ſelf, an honourable Sallary out of your Treaſury: without which liberality of yours, I could not have been at the Univerſity: eſpecially the Venetian, nor have lived three years there, and followed my Studies. You have ſince received me into the Counſell of Phyſitians, and have commanded me to be fellow of their Colledge; Theſe, and many other benefits heaped up upon us, my Vnkle while he was alive, did always moſt gratefully acknowledge; and his quiet Aſhes at preſent do confeſs them, and I my ſelf who have out-lived him, ſhall at all times retain a memory and due ſenſe of them. Your ſingular humanity al, and incomparable civil obliging nature, worthy Senatours hath enboldned me ſo far, that I have ventured to trouble you with the Dedication of the Chyrurgions Armory, and Store-houſe, and to defend theſe Phyſical Meditations with your Patronage, as with the Shield of Aiax.

I beſeech you therefore, Governours of your Country, to accept kindly, this ſmall Pledge of a grateful mind; which I moſt humbly preſent you with, and pray to God to preſerve you, protect you, and defend you ever, in peace, happineſs, and proſperity; together with this Common-wealth, and all the Members of it, that you may rule to the benefit and good of ours, and after Ages.

Your moſt obedient
Johannes Sculteſus.

THE AUTHORS PREFACE.

THat our firſt Parents were framed and Created by the Divine Power, in Perfection, ſtrong in Body, bleſſed with an equal Temperament, Impregnated with a moſt pure flame of Life in the Oleaginous natural Moiſture, and Abſolute all manner of ways. This preſſing Argument ſeems to convince, That in the State of Innocency they had power to Regulate their Bodyes without any fear of Death, and fully to reſtore, in the ſame goodneſs, their Radical Moiſture, at any time waſted with heat; and to continue it even to immortality, if they had not been deceived by the Craftineſs of the Serpent, and taſted of the forbidden Fruit, whereby they were afterwards obnoxious to death, and their Poſterity like unto them.

Thoſe alſo who lived before the Flood, and were not

at ſo great a diſtance from their Original, by the Holineſs of their Life, and their Innocent and Simple Diet, taken only from Vegetables; ſome of them lived neer a thouſand years, and others protracted, and extended their term of Life to many Ages; but after that, when Gluttony, and Intemperance provoked mens appetites, with divers ſorts of Diſhes, and the unlawful uſe of Venery did by degrees debilitate their Bodies, and exhauſt their Spirits; the length of their days was very much ſhortned, and their Lives were terminated in an hundred and twenty years: for as a thick Cloud doth imbibe and obſcure the Rays of the Sun, ſo a vitious habit of body doth Cloud, and Obſcure the Light of our Body, and Lamp of Life: and thus daily neceſſity gave a beginning to the Therapeutical part of Phyſick, whilſt circumſpect Fathers of Families were obliged to procure ſome Domeſtick helps, and eaſily acquired Remedies to ſtop, or retard the too haſty rigour of Death,

But though many Diſeaſes may extirpated by the ſtrength of Nature, alone, by the due obſervance of the ſix *Res non Naturales*, and the Alternate uſe of thoſe two great helps, of Altering and Purging Medicines; yet there are ſome ſo obſtinate as not to yield to any of theſe, or to be remedied any other way than by Chyrurgical Operations, by dividing what is united, by uniting what is disjoyned, and by extirpating what is ſuperfluous, according to the true ſaying of *Hippocrates*. *Diſeaſes which Medicines cure not, the Knife cureth; what the Knife cures not, Fire cureth; what the Fire cures not, they are to be eſteemed uncurable.*

In which Operations of Chyrurgery, both in former times, and at preſent, almoſt an infinite number of induſtrious Promoters of Phyſick, *Ægyptians, Græcians, Arabians, Latines, Italians, French*, and of moſt Nations by reaſon of the neceſſity of them, and the benefit accring to mankind from them, have ſo diligently tak

pains all their life-time, that they would leave nothing unattempted, till they could add a perfection to this part of Phyſick, and by their Writings conſecrate it to Poſterity. Theſe following forty three Chyrurgical Tables, for the accurate delineation of the Inſtruments, their Form, and Magnitude, the faithful Demonſtration of the manner of Working, and the uſeful Obſervations added to them, not unworthy, perhaps, to ſee light, I have gathered together, for the common good of Mankind; delivering what with my own eyes, and hands, I have often proved, and experienced: that according to the ſlenderneſs of my abilities, and the ſmalneſs of my Talent, I might render ſome ſervice to Poſterity; eſpecially in the Reading of *Hieronimus Fabritius*, whoſe words, and footſteps I follow here, and in my Practiſe. Others hereafter may attempt things more difficult, may ſupply defects, and publiſh things more perfect; for all Envy being far from me, I leave a free, and open field to all Ingenious Perſons, deſiring earneſtly they would ſet forth ſomething more elaborate than this; or in the mean time, vouchſafe to uſe it.

THE

THE TABLE OF INSTRUMENTS.

A

AMβη of *Hippocrates*, *Tab.* 21. *Fig.* 1.
Alphonsus his Instruments, *Tab.* 15. *Fig.* 1. 2. & 3.
Aquependens his Eye-glass, *Tab.* 8. *Fig.* 10.

B

THE Breast-plate of *Galen*, *Tab.* 43. Letter *S.*
Bandage called *Cancer*. *Tab.* 31. *Fig.* 9.
Bandage for Issues on the Corronal Suture, *Tab.* 33. *Fig.* 8.
Bandage of *Sostratus*, *Tab.* 38. *Fig.* 6
Bandage for the Womb, *Tab.* 41. *Fig.* 3.
Bandage for Members broken and out of joint, *Tab.* 29. Letters *E. F. G.*
Bandage called *Galen's* Sling, *Tab.* 43. Letter *A.*
Bandage for Members, which some part cut off, *Tab.* 27. *Fig.* 14.
Bandage for the Fundament. *Tab.* 41. *Fig.* 7.
A Block of Wood, round and high, on which the parts be cut off with a Chizel, must be placed, *Tab.* 20. *Fig.* 6.

C

A Case to place a Leg in that is broken, or out of joint, *Tab.* 21. *Fig.* 6.
The Capsula, or Casket, of *Julius Casserius Placentinus*. *Tab.* 1. *Fig.* 7. &c. *Tab.* the last, Letter *G.*
Candles of Wax for fleshy substances growing in the passage of Urine, *Tab.* 13. *Fig.* 9. & 10.

A

A Catheter, *Tab.* 14. *Fig.* 5.
Cauteries actual, to burn the hinder part of the Head, *Tab.* 17. *Fig.* 6. 7. 8. & 9.
Cauteries made for other parts, *Tab.* 19.
Circles for the Matrix, *Tab.* 17. *Fig.* 6. 7. &c.
Crows Bills, *Tab.* 10. *Fig.* 5.
Cranes Bills, *Tab.* 11. *Fig.* 6.
Cranes Bills, turning, or bending, *Tab.* 9. *Fig.* 10.
Cizers to Cut grifly, and brauny parts, *Tab.* 20. *Fig.* 2.
Cap of Silver, *Tab.* 13. *Fig.* 8.
Celſus his Spatha. *Tab.* 2. *Fig.* 1.
A Chizel, with which, Fingers, and Hands are Cut off, *Tab.* 20. *Fig.* 4.

D

THE Dilator of the Mouth, *Tab.* 9. *Fig.* 9.
Dividing Inſtrument, *Tab.* 2. *Fig.* 10.

E

THE Enterenchyta, to give ones ſelf a Gliſter withall. *Tab.* 13. *Fig.* 5.
Engine of *Vitruvius*, to extend diſlocated Joints. *Tab.* 22. *Fig.* 1.
Ear-Spring, *Tab.* 13. *Fig.* 4.
Eye-Glaſs of *Aquependens*, *Tab.* 8. *Fig.* 10.

F

A Forceps called the Parrats Bill, *Tab.* 4. *Fig.* 2. *Tab.* 11. *Fig.* 1.
Forceps to burn a Seton in the Neck, *Tab.* 7. *Fig.* 1. 2. & 3.
Forceps to cut a Seton in the Neck, *Tab.* 7. *Fig.* 10.
Forceps to take out the Polypus, and to cut off the Clitoris, both ſtreight, and bended. *Tab.* 9. *Fig.* 1. & 2.
Forceps to draw out the Teeth, *Tab.* 10. *Fig.* 6. & 7.
Forceps called the Crows Bill, *Tab.* 10. *Fig.* 5.
Forceps moſt ordinary for drawing Teeth, *Tab.* 10. *Fig.* 4.
Forceps called the Cranes Bill, *Tab.* 11. *Fig.* 6.
Forceps, or bended Cranes Bill, *Tab.* 9. *Fig.* 10.
Forceps, or Gooſe Bill, with a Skrew, *Tab.* 15. *Fig.* 4.
Forceps, or Gooſe Bills, without a Skrew, *Tab.* 15. *Fig.* 6.
Forceps named the Deceitful Forceps, *Tab.* 17. *Fig.* 29.
A large cutting Forceps, *Tab.* 20. *Fig.* 1.
A Form from *Hippocrates*, *Tab.* 22. *Fig.* 4. & *Tab.* 25.
Forceps bended in a Semicircle, with Teeth to draw out Bones ſticking in the Throat, *Tab.* 10. *Fig.* 1.

G

A Gooſe Bill with a Skrew, *Tab.* 15. *Fig.* 4.
A Gooſe Bill without a Skrew. *Tab.* 15. *Fig.* 6.
Gloſſocomon of *Galen*, *Tab.* 21. *Fig.* 4.
Gloſſocomon of *Hippocrates*, *Tab.* 21. *Fig.* 1.
Glaſs Veſſell for the Eyes. *Tab.* 8. *Fig.* 10.
Glaſs with which the Nipples are drawn out, *Tab.* 16. *Fig.* 5.
Girdle of *Hildanus*, *Tab.* 22. *Fig.* 2.

H

A Handle for Needles, *Tab.* 8. *Fig.* 3.
The hairy Inſtrument, *Tab.* 8. *Fig.* 1.
A Hook that is ſharp, convenient to lift up the Eye-lids, and to raiſe up the Haw in the Eye, *Tab.* 8. *Fig.* 9. In other places you may ſee double pointed Hooks, as *Tab.* 34. *Fig.* 5. & *Tab.* 30. *Fig.* 8.
A Hammer of Lead, *Tab.* 2. *Fig.* 11.
Hammer of Wood, *Tab.* 20. *Fig.* 5.
Hildanus his Remora, *Tab.* 22. *Fig.* 3.
Hippocrates his Form, *Tab.* 22. *Fig.* 4. & *Tab.* 25.
Handle of the Trepan, to turn it with, *Tab.* 2. *Fig.* 6.
Hildanus his Girdle, *Tab.* 22. *Fig.* 2.
A Hook to draw forth the dead Child. *Tab.* 17. *Fig.* 1.

I

IRon Inſtruments, to burn Iſſues on the top of the Head, *Tab.* 1. *Fig.* 2.
An Inſtrument plainly hollow, and cutting, fitted to the Pipe for making Iſſues on the Coronal Suture. *Tab.* 1. *Fig* 4.
A Starry Inſtrument. *Tab.* 1. *Fig.* 5.
A toothed Inſtrument. *Tab.* 1. *Fig.* 6.
A lenticular Inſtrument called by the Greeks Φακοειδὴς. *Tab.* 2. *Fig.* 8.
A dividing Inſtrument. *Tab.* 1. *Fig.* 5.
Inſtrument called Trioploides, *Tab.* 3. *Fig.* 3.
The Hairy Inſtrument, for the Cure of an Ægilops. *Tab.* 8. *Fig.* 1.
An Inſtrument to cut away the Uvula, *Tab.* 9. *Fig.* 7.
An Inſtrument to force open the Mouth, *Tab.* 9. *Fig.* 9.
An Inſtrument to take the Stone out of the Paſſage of Urine, *Tab.* 14. *Fig.* 8.
An Inſtrument to Pierce the Belly, of Dropſical Perſons, and the Scrotum of thoſe who are troubled with the watry Hernia, *Tab.* 12. *Fig.* 17.
Inſtruments to take Bullets out of Wounds, *Tab.* 14. *Fig.* 9. 11. *Tab.* 15.

Inſtrument of *Alphonſus*. *Tab.* 15. *Fig.* 1. 2. & 3.
Inſtrument to extend a Contracted Leg, *Tab.* 18. *Fig.* 1.
Inſtrument to bind a Stifle Extended Arm, *Tab.* 18. *Fig.* 5.
Inſtrument to ſtop the bleeding of the Artery of the Wriſt, *Tab.* 43. *Sect. B.*
Inſtrument of *Hieron. Fabrit. ab Aquapendente*, to cure Caruncles in the paſſage of Urine, *Tab.* 40. *Fig.* 5.

K

A Knife that is Hooked to cut the Fleſh, before the taking off a Member, *Tab.* 20. *Fig.* 3.
Knife ſharp on both ſides, *Tab.* 2. *Fig.* 1.
Streight Knife, *Tab.* 2. *Fig.* 2.
Knife to ſeparate the Eye-lids grown together, or faſtned to the skins of the eye, *Tab.* 8. *Fig.* 8.
Crooked Pen-Knife, *Tab.* 12. *Fig.* 4.
Knife to Dilate the Wounds of the Belly, *Tab.* 14. *Fig.* 4.
Knife to perform the Paracentheſis, in the Belly, and Breaſt, *Tab.* 12. *Fig.* 1.
Knife to Dilate Wounds in the Breaſt, *Tab.* 12. *Fig.* 1.
Knife ſharp on both ſides reſembling Myrtle Leaves, *Tab.* 12. *Fig.* 6. & 7.
Knife in a Ring, the chief uſe of which, is in opening the Breaſts of Women ſuppurated, *Tab.* 12. *Fig.* 11. The manner of uſing it in the Thorax, ſee, *Tab.* 37. *Fig.* 5.
Knife to cut a Seton in the Neck, *Tab.* 18. *Fig.* 6.

L

A Lancet to open Veſſels to let bloud, to perforate any place, and cut iſſues. *Tab.* 19. *Fig.* 13.
Levator or Lever the ſmalleſt. *Tab.* 2. *Fig.* 7.
The ſtronger Levatory. *Tab.* 3. *Fig.* 2.
Levator to the Triploides. *Tab.* 3. *Fig.* 3. *B.*
Levator of *Ambroſe Parey*. *Tab.* 3. *Fig.* 4.
Levators divided into three parts. *Tab.* 10. *Fig.* 8. & 9.

M

Μηνιγοφυλαξ or a preſerver of the Membrane. *Tab.* 2. *Fig.* 9.
Μαχαιρα σιδουδις or a double edged Knife. *Tab.* 2. *Fig.* 1.
Mentrenchyta or the Womb Syringe. *Tab.* 13. *Fig.* 3.

N

NIppers, or Pincers, of *Celſus*, and *Paulus Ægineta*. *Tab.* 4. *Fig.* 1.

A Needle to burn a Seton. *Tab.* 7. *Fig.* 4.
Needle to couch Cataracts. *Tab.* 8. *Fig* 2. & 4.
Needle to perforate the Belly or Codd of Dropſical perſons. *Tab.* 12. *Fig.* 17. & 20.
Needle to pierce Breaſts which are to be cut off. *Tab.* 12. *Fig* 8.
Needle uſed in Geldiug and in opening depending hollowneſses *Tab.* 14. *Fig.* 5.
Nili Plintheum. *Tab.* 21. *Fig.* 5.

O

THe Otenchyta or Syringe for the Ear. *Tab.* 13. *Fig.* 4.

P

A Pipe to make iſſues in the Limbs. *Tab.* 1. *Fig.* 1.
A Pipe to make Iſſues in the Coronal ſuture. *Tab.* 1. *Fig.* 3.
Divers Pipes to be put into the Noſtrils *Tab.* 9. *Fig.* 3. 4. & 5.
A Pipe to be put into the Throat. *Tab.* 10. *Fig.* 2.
Pipes with wings or ſhoulders uſefull in Wounds of the Breaſt, and in perforating the Belly. *Tab.* 12. *Fig.* 12. 13. 14. 15.
Pipes to cure the piles, and dry up the Ulcers of Fundament, *Tab.* 16. *Fig.* 1. 2. & 3.
Pipes to draw out the matter of the Empyema. *Tab.* 9. and 10.
A pipe to mitigate the heat of Urine. *Tab.* 12. *Fig.* 16.
Parrots Bills, Pincers. *Tab.* 4. *Fig* 2. *Tab.* 11. *Fig.* 1.
Pincers to burn a Seton in the Neck. *Tab.* 7. *Fig.* 1. 2. & 3.
Pincers to cut a Seton in the Neck. *Tab.* 7. *Fig.* 10.
Pincers ot take out the Polypus, and to cut off the Clitroris both ſtreight and bent. *Tab.* 9. *Fig.* 1. & 2.
Pellican Pincers. *Tab.* 10. *Fig.* 3.
Pincers to draw teeth. *Tab.* 10. *Fig.* 6. & 7.
Pincers called Crows-bills. *Tab.* 10. *Fig.* 5.
Pincers the moſt common for pulling out Teeth. *Tab.* 10. *Fig.* 4.
Pincers called Cranes Bills, *Tab.* 11. *Fig.* 6.
Pincers or crooked Cranes bills. *Tab.* 9. *Fig.* 10.
Pincers called Gooſe-Bills, with a Skrew. *Tab.* 15. *Fig.* 4.
Pincers called Gooſe-bills without a Skrew. *Tab.* 15. *Fig.* 6.
Pincers called the deceitfull Pincers. *Tab.* 17. *Fig.* 9.
Pincers large a cutting. *Tab.* 10. *Fig.* 1.
Probe that is broad. *Tab.* 8. *Fig.* 6.
Probe that is round. *Tab.* 8. *Fig.* 6.
Probe with a Skrew. *Tab.* 8. *Fig.* 7.
A Peircer very ſharp with which Gun-ſhot are taken forth. *Tab.* 15. *Fig.* 7.
Parey his Levator. *Tab.* 3. *Fig.* 4.
Pincers of *Celſus* and *Paulus Ægineta*, *Tab.* 4. *Fig.* 1.
Pincers bended in a ſemericle with Teeth to draw out Bones ſticking in the Throat. *Tab.* 10. *Fig.* 1.

The Table of Inſtruments.

R

A Ring of Braſs to fix the Eye. *Tab.* 8. *Fig.* 5.
A Raſour. *Tab.* 2. *Fig* 2.
Remora of *Hildanus*. *Tab.* 22. *Fig.* 3.

S

A Spoon to be applied to the Uvula relaxed. *Tab.* 9. *Fig.* 8.
A Spoon for the taking a ſtone out of the paſſage of Urine. *Tab.* 14. *Fig* 8.
The *Speculum Ani*. *Tab.* 17. *Fig.* 3.
Speculum Matricis. *Tab.* 17. *Fig.* 4.
Splents. *Tab.* 29. Leetter K.
The Staff. *Tab.* 14. *Fig.* 7.
Speculum Oris *Tab.* 11. *Fig.* 1.
Spatha of *Celſus*, *Tab.* 2. Fig. 4,
Saws to cut down the Space between the Trepans. *Tab.* 5. *Fig.* 1.
Streight Saws. *Tab* 6. *Fig.* 1. & 2.
Scraping Irons. *Tab.* 6. *Fig.* 3. &c.
Stile of Iron to be thruſt into the Pipes put into the Noſtrills. *Tab.* 9. *Fig.* 6.
Stile of Iron to be fitted to the Pipe for the fundament. *Tab.* 16. *Fig.* 4.
Scolopomacheria or crooked Knives. *Tab.* 12. *Fig.* 1. 2. 3. & 5.
Syringotoms blunt on the outſide, ſharp on the inſide, to open Fiſtula's. *Tab.* 14. *Fig.* 1. 2. & 3.
A common Syringe *Tab.* 13. *Fig.* 1.
Syringe for the Ear, *Tab.* 13. Fig. 4.
Syringe to give ones ſelf a Glyſter withall. *Tab.* 13. *Fig.* 5.
Soſtratus his bandage. *Tab.* 38. *Fig* 6.

T

A Truſs for People of full grouth. *Tab.* 39. *Fig* 6.
A Truſs for Children. *Tab.* 29. *Fig.* 7.
Tooth-picker. *Tab.* 10. *Fig.* 10.
Truſs for the Navill. *Tab.* 38. *Fig* 8.
Triploides with its triple baſis or three feet. *Tab.* 3. *Fig* 3.
A Tunnel. *Tab.* 10. *Fig.* 11.
Trepan Male, *Tab.* 2. Fig, 3,
Trepan Female. *Tab.* Fig. 4. & 5.
Trepan of *Hier. Fabr.* *Tab.* 2. *Fig.* 6.
Three-formed Trefine. *Tab*, 3. *Fig.* 1.

V

Vitruvius his Engine. *Tab.* 22. *Fig.* 1.

W

THe Womb Syringe, *Tab.* 13. *Fig.* 3.

NOte that the Figures of the Instruments of this Edition, are diminished by half in proportion to those ingraven at *Ulme*; so that taking them to be as big again, you will have exactly the due and just bigness at first delineated by the Author.

A DESCRIPTION

Of all ſorts of Inſtruments uſefull in CHYRURGERY.

Written by

Dr. JOHN SCVLTETVS, &c.

The firſt Table.

Of Pipes, ſolid and cutting tools of Iron, whereby Fontanels are made with fire.

THE I. Figure is an Iron Inſtrument, which *Hieron. Fabritius ab Aquapendente*, concerning a Fontanel in the coronal future, calls a ſmall Pipe, and the place of the Fontanel being found and marked with ink, he forcibly thruſts it on with his left hand; that by the impreſſion, and the natural coldneſs of the Pipe, the heat of the red hot iron, (Figure II. following) and the pain thence ariſing, might be palliated; and the parts adjoining might be defended from the injury of the fire.

The II. Figure is a ſolid and uniform iron inſtrument, without a handle (yet one of bone or wood may be fitted for it, as the before-mentioned Pipe hath) which being well fired, and with the right hand thruſt into the aforeſaid Pipe, burns a fontanel. With theſe two iron inſtruments Fontanels are made only in the members of mans body; namely, when the ſick are not fearfull of a red hot iron, or the Chyrurgian hath not the *capſula* of *Iulius Caſſerius Placentinus*, to hide his actual cautery with.

TABVLA I.

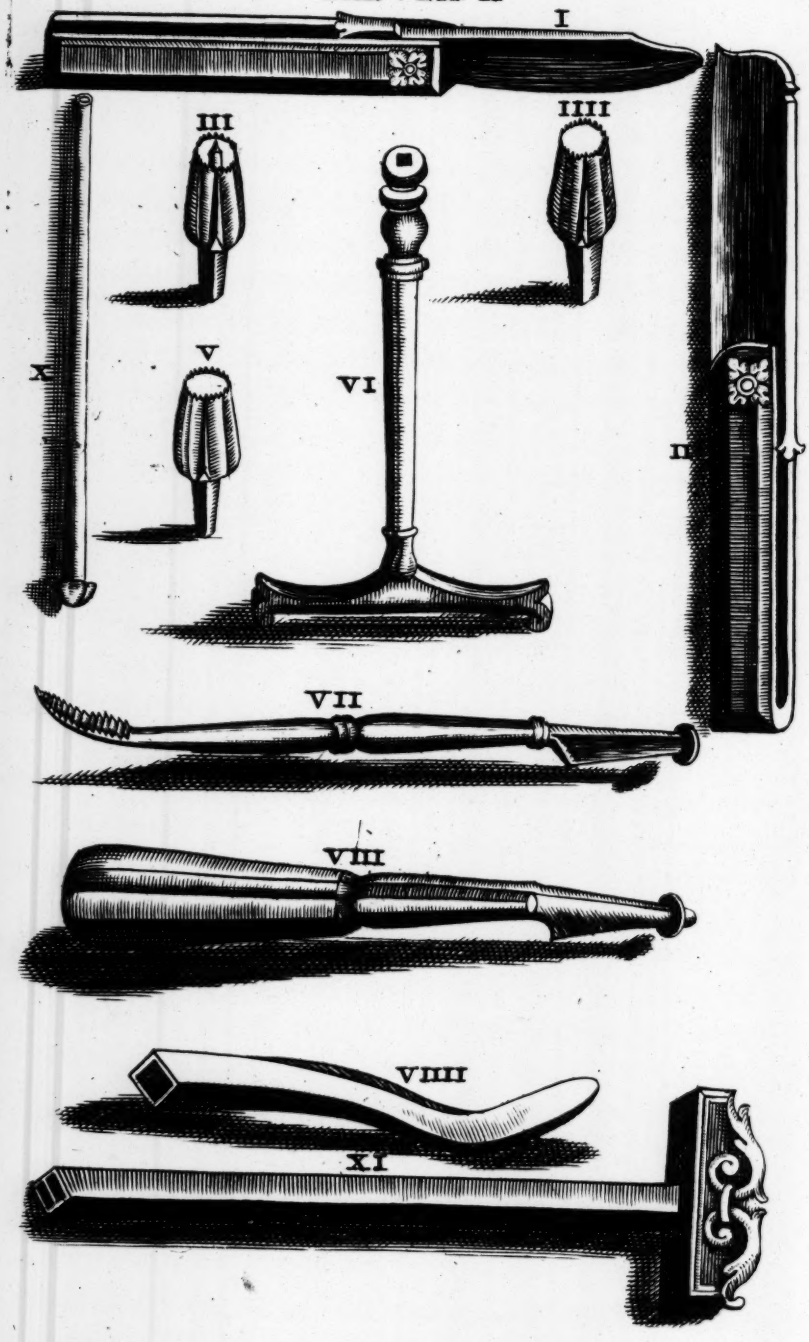
The III. Figure is alſo an iron Pipe, yet ſomewhat deeper then the former, to receive the inſtrument that followeth next.

The IV. Figure is an inſtrument plainly hollow and cutting; by which, being made red hot, and thruſt into the Pipe preceding, we make a fontanel, where the coronal and ſagittal ſutures meet; not only burning, but cutting alſo by the ſharp point of the inſtrument, at the end thereof. This when it toucheth the Skul muſt be turned about, that it may make ſome print upon the Skul-bone. Many diſlike the uſe of this inſtrument, not only for the pain they ſay it cauſeth, but for fear of the dangerous inflammation in the *Pericranium*, which afterwards may eaſily be communicated to the *Dura mater* which is under it, by the affinity of the ſutures; wherefore modern Chyrurgians rejecting this, uſe inſtead thereof one that is ſolid and uniform; (whoſe form you ſhall find in the II. Figure of this Table) yet in my judgment the hollow inſtrument is to be preferred, becauſe that ſolid inſtrument may far more eaſily bring the foreſaid inconveniences: I add that burning of the ſutures with a ſolid inſtrument proceeds too ſlowly, by reaſon of the thickneſs, hardneſs, and denſity of the skin of the head: But manual operations, chiefly thoſe that are performed with a red hot iron, muſt be done moſt nimbly.

Figures V. and VI. are iron tools not ſimply cutting and hollow; but the firſt hath a ſtar at the end, and the latter is made with teeth; of theſe two, that by reaſon of the ſtar cannot at all be turned about; and this by reaſon of the teeth doth not cut ſo readily: Wherefore modern Chyrurgians, and amongſt them almoſt the chief, *Hierom Fabritius ab Aquapendente*, reject theſe two inſtruments as unfit for operation.

The Figures VII, VIII, IX, X, XI, XII, XIII, taken as joined together, make the *capſula*, an inſtrument to burn Fontanels in parts placed without the head, the beſt of all, and the moſt abſolute in all reſpects; which was invented by *Iulius Caſſerius Placentinus*, to avoid theſe three inconveniences; namely, heat, pain, and ſight of the fire, which fearfull men, women and children are afraid of. This invention of *Placentinus* hides the actual cautery; which (becauſe it moſt ſuddenly cauſeth an Eſcar, ſo that the Patients can ſcarce obſerve it) if it be not to be preferred before potential cauteries; yet I think, in all right, it ought to be uſed in their place: For no pain is perceived at all, or burning underneath, by reaſon of the end of the caſe, and the harder lying upon it by depreſſion, and the wonderfull ſwiftneſs in the operation; for which cauſe there is not any offence, in the leaſt, to be feared of the parts near unto it.

TABVLA. II



The VII. Figure is a hollow plate of iron, round, and immovable (*a. b.*) to this, and to the former plate of iron likewiſe, that is round with a hole in the middle, and movable toward the lower parts, (*c*) four little wheels are faſtned in, which are carried about with a wier of braſs, (*d*) that the Style (Fig. VIII.) that is ſolid made of Copper, being made red hot, and thruſt into the foreſaid Plates, (as you ſee Fig. IX.) and laid aſide into the wooden *capſula*, Fig. X. may be hid by the cover that hath a hole in it, Fig. XI. and by the help of a ſmall pin with a broad head (Fig. XII. and XIII.) may be preſſed down.

The II. Table.

Of Celſus *his* Spatha, *Raſour knife, the round ſaws, male and females, the handle to turn them, the Centicular Inſtrument, the moſt weak Levitor, the keeper of the membrane, the croſs dividing inſtrument; all which the Chyrurgian hath need of to cure the fractures of the Skul.*

FIg. I. is an inſtrument which *Hippocrates lib. 2. de morb. cap. de ſuppuratâ peripneumoniâ*, calls μαχαιρις σηροειδης; but *Celſus* and *Paulus* call it commonly *Spatha*; namely, a double little knife ſharp on both ſides, and in the upper part ſomewhat broad, which at the end united in one point; with this the wounds of the head are dilated croſs wiſe or triangularly, and *Paracenteſis* is ſafely made in the Thorax.

Fig. II. is a ſhaving knife, or ſtraight pen knife, that cuts but of one ſide, and is blunt on the other, which is uſed when there is no fear of the parts underneath; namely, in dividing the ſcalp of the head as far as the skul, and in opening nodes of the French pox, eſpecially upon the ſhin bone or elſewhere; again where both edges may do hurt, as in cutting the dead child in the womb into many parts, and dividing the caruncles of the matrix; and therefore is it called *Scodeghino* by the Italians.

Fig III. is the *male Trepan*, or an inſtrument made of the beſt ſteel, hollow, round, at the utmoſt brims nicked like a ſaw, and it hath four ſhoulders; namely, that part of the Trepan that muſt be turned about the bone, the Greeks call it κοινικιον, but *Celſus lib. 8. cap. 3.* calls it *Modiolus*; which hath a pin in the middle, that when it firſt begins to be turned, it may ſtand faſt upon the *cranium*, made bare of the *Pericranium*; and that the parts about it, name-

ly the lips of the wound, and the *Pericranium*, which are parts moſt ſenſible, may be preſerved the more ſafe from hurt But if the Trepan to be uſed had no pin at firſt, the trepaning of the skul would be performed with the greateſt danger, and with vehement pain.

Fig. V. and VI. are female Trepans, of the ſame bigneſs with the precedent male; and there is no other difference between theſe and that; but that theſe want a pin, and ſo are called females. Before we uſe theſe females we muſt make ſome print upon the skul with the male, that the females may ſtand the faſter upon it. Now for to trepan the skull, the Chyrurgian muſt have at hand at leaſt three Trepans exactly equal one to the other; namely, one male and two females, that he may oft-times change them, and dip them into cold water or oyl of roſes, leaſt being full of duſt they ſhould hinder the operation; or elſe being heated by frequent turning about, they might inflame the skul and the membranes that lie under it.

The invention of ſhoulders that hinder the Trepans from ſinking down into the membranes of the brain, or into the ſubſtance of it, is an argument of the excellent wiſdom of *Hierom Fabritius ab Aquapendente*; for though ſome of the modern Chyrurgians, as *Vid. Vid. lib. Chyrurg. 4. c:* 10, and *Ioan. Andreas à Cruce lib.* 7. *de Inſtrum*: make alſo ſome mention of the ſhoulders in Trepans, yet none of them took care to have them ſo exactly and acurately made as *Fabritius* did: I uſed theſe Trepans never but with good ſucceſs; and at this time they are uſed (all the inſtruments of the Antients being rejected, which they formerly invented to terebrate the skul; the figures whereof are to be ſeen in the Authours now quoted, and in *Paræus lib. 9. cap.* 18.) by the Chyrurgians, eſpecially thoſe of *Padua*, and by the ſucceſſours of *Fabritius* in his Practical and Chyrurgical profeſſion; amongſt whom yet lives that moſt famous Phyſitian, Chyrurgian, and Profeſſour at *Padua*, *Petrus de Marchettis*, Knight of the Order of Saint Mark, of the Venetians; who was formerly my much reſpected School-fellow, for many years, in Anatomy and Chyrurgery; at whoſe wonderfull dexterity in operation (whereby he almoſt ſurpaſſeth all the Chyrurgians of Italy) not only all Italy, but Schollers coming from all parts are aſtonished; and innumerable perſons, being thereby cured, extol him to the Heavens.

Fig. VI. is the other part of the Trepan, which is called the handle, or part to turn it with; and there is a hole cut in it, by means whereof the ends of the Trepans, wrapt about with cotton, are eaſily

ſily put in and taken out, ſo often as need requires to change theſe round ſaws. By this means a Trepan is made of a round ſaw and the handle, wherewith the skul is quickly, ſafely and eaſily perforated.

Fig. VII. is an inſtrument compounded of a ſcraping tool (becauſe of the lentel at the end of it called a Lenticular) and a Levitor. At the end of the perforation of the skul, this Levitor is thruſt in betwixt the lips of the bone cut forth, to move the ſmall bone up and down, that it may grow looſe, and may be taken forth by the toothed part of the Pinchers, (Table IV. Fig. I.) alſo it is uſed to raiſe up mean depreſſions of the skul, and hath its ſtability only in the Chyrurgians hand; the Lenticular ſerves for all roughneſs to ſmooth it, and to ſcrape it off (which is left behind after terebration, and cutting forth of the bone removed) leſt that the membranes of the brain, by reaſon of their continual motion, ſhould ſtrike againſt it and receive ſome hurt.

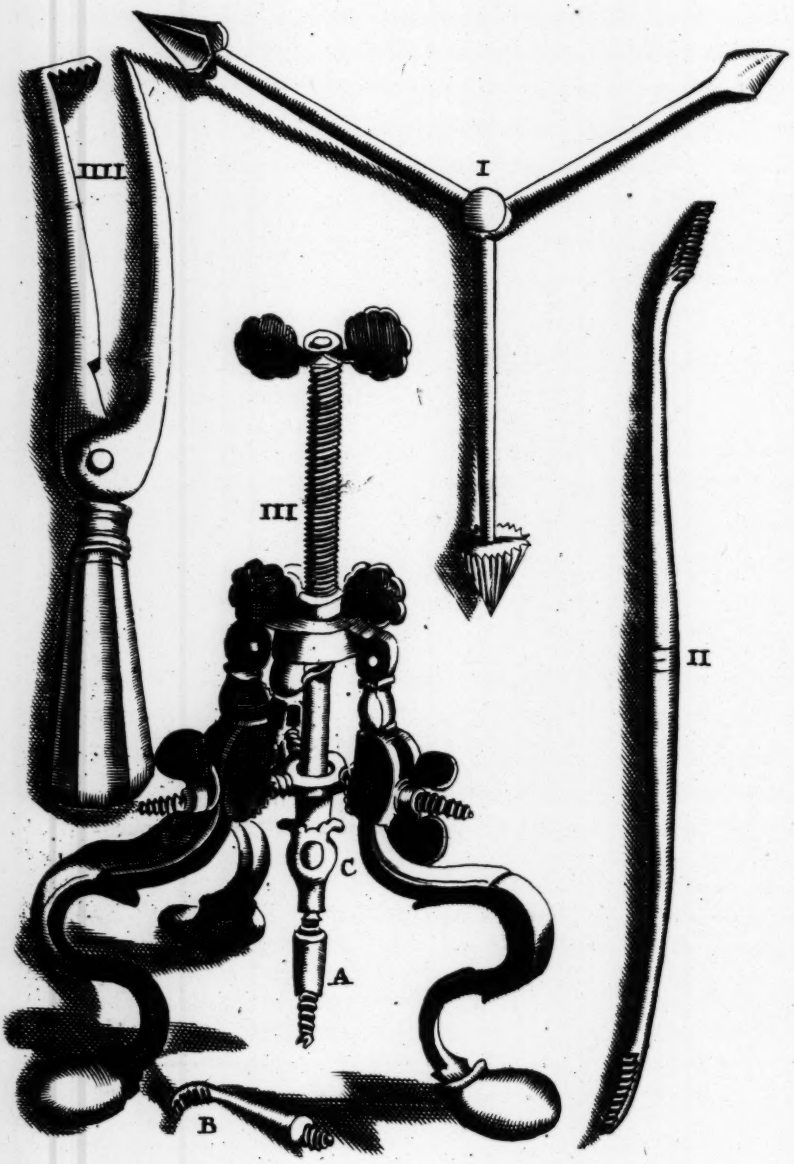
Fig. VIII is a Lenticular inſtrument alone, which levigates the brims of the hole made as I ſaid before, leſt pricking the membranes they might cauſe pain and inflammation.

Fig. IX is a plate of ſilver, (for it muſt never be made of iron, becauſe of the imbred cold thereof, which is hurtfull both to the *dura* and *pia mater* that cover the brain) firm, ſomewhat crooked, and ſmooth on the outſide, which we uſe in great depreſſions of the skul, and in fractures, where it is neceſſary to perforate the skul-bone three or four times with the Trepan, and to cut forth the ſpaces between the holes; for then the Plate is let down between the skul and the *dura mater*, that the outward part of it may be neareſt to the brain, leaſt by the ſharpneſs of pincers and ſaws, (the Figures whereof are to be ſeen underneath, Table V. and VI.) the membranes of the brain ſhould either be pricked or cut unawares: Hence *Celſus*, who in deſcribing iron inſtruments for Chyrurgery was very diligent, *lib.* 8. *cap.* 3. calls it the preſerver of the membrane, in Greek μηνιγγοφύλαξ.

Fig. X. is a croſs dividing inſtrument, whereby the *dura mater* meanly preſſed down, is exactly applied to the skul, that the purulent matter, collected between the skul and the membranes, may eaſily come forth by the hole made with the Trepans.

Fig. XI. is a leaden mallet, which men formerly uſed when they would ſeparate any part of the *cranium* with ſcraping inſtruments that cut, (whereof there are divers ſorts preſented in *Paræus l.* 9. *c.* 5.) to avoid the noiſe, and to hinder the commotion of the brain. The modern and more cautious Chyrurgians of this age, uſe for this operation pincers and ſmall ſaws; of which a little underneath, Table IV. and VII.

TAB. III



The III. Table.

Of the three-formed Trepan, the ſtronger Levitor, the Inſtrument called Triploides, and Paræus ***his Levitor, wherewith the pricks of the skul are taken away, and the depreſſions of it are raiſed up.***

FIG. I. is a Trefine, an inſtrument of only iron, which hath three divers ſorts of Trepans, the uſe whereof is neceſſary in the pricking of the skul, that doth not penetrate both the Tables, that with them the print made upon the skul may be taken away. The triangular part of this inſtrument may be uſed alſo for the ſmall Trepan, with which *Gulhelmus Fabritius Hildanus*, perforated almoſt the firſt table before he applied the Triploides, with a ſcrew.

Fig II. is a Levitor which I uſe in depreſſions of the skul, this raiſeth with more force then the other deſcribed Table II Fig VII, becauſe it hath its firmneſs, not only in the hand of him that raiſeth it, but alſo in the head.

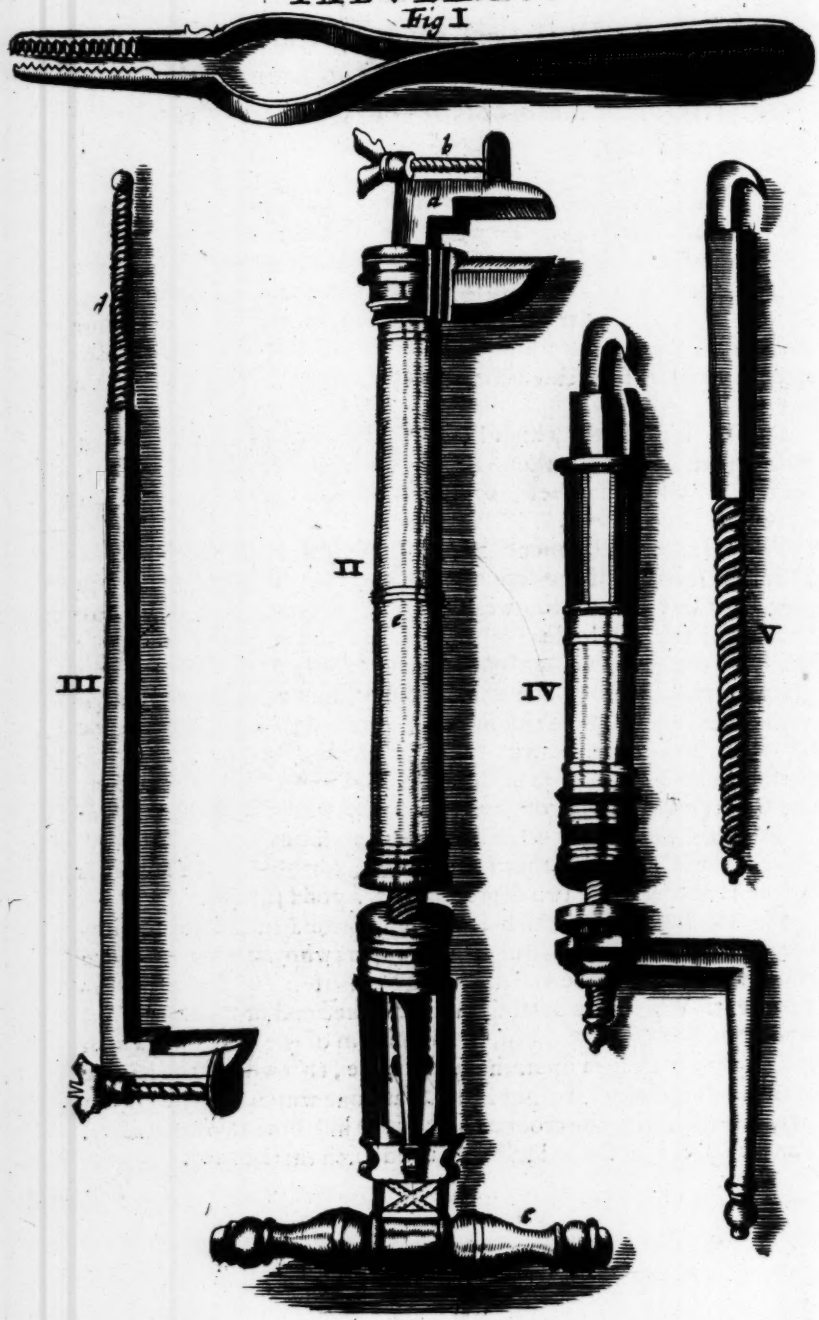
Fig. III. is an inſtrument called a Triploides, from the threefold baſis that it hath: if the depreſſion of the skul be ſo great that the precedent Levitors are too weak to ſerve the turn, I let down the Levitor of the Triploides (*b*) if there be room enough, and I raiſe the bone preſſed down, upright perpendicularly; but if there be no place for this Levitor, the middle depreſſion muſt be perforated with the piercer of the Triploides (*a*,) beyond the Diplois, and be elevated the way mentioned, taking eſpecial care that the wimble perforate not both Tables of the skul, and ſo prick the *dura mater*. See *Gul. Fabritius Hildanus, centur.* 2. *obſ.* 4. where he moſt acurately deſcribes the manner of raiſing the depreſſions of the skul, yet with other inſtruments that I never uſed; but with this Triploides I have reduced one or two depreſſions with good ſucceſs.

Fig. IV. is a Levitor which is uſed by others in the greateſt impreſſions upon the skul, imitating Coopers who are wont to reduce the bords of their wine veſſels that are crusht in, with the like inſtrument. Wherefore putting in the crooked end of the Levitor (*a*) under the bone preſſed down, the other arm of the Levitor (*b*) which is ſtreight, muſt lean upon the ſound bone, that whileſt the handle is thruſt down with the right hand, that bone which is preſſed down may be raiſed with the crooked part of the inſtrument. Alſo *Ambroſ. Paræus l.* 9. *c.* 5. deſcribed and ſhadowed forth this Levitor.

TA-

TABVLA. IV.

Fig I



The IV. Table.

Of the Puller and Pincer with a Parrats beck, and a Vultures; whereby small bones that prick the membranes of the brain are broken off, and taken forth.

FIG. I. is an instrument very necessary for manual operations, which *Paulus Ægineta lib. 6. cap.* 23. calls ἀκαντάβολον, and C: *Celsus l.* 7. *c.* 30. calls *Volsella*, a Puller, with the double and toothed end of it. (A) they take forth the peece of the bone which is corrupt and movable, also darts and bullets and the fragments of them; and all tents and hairs, and all extraneous things of that kind, which are found in wounds. The same thing is performed with instruments printed Tab. XI. Fig. III. and VI. either of which is to be used as opportunity serves. Also this part of the puller serves singularly well to pull out hairs from the ey-lids, which prick the eys. Besides the foresaid uses it is good, for it serves for to wait on Physick, that is to make women fair; for with this women, especially that belong to the Court, pull out by the roots hairs in their ey-brows, and from other parts of their bodies. Note that if a small bone, or something that is accidental in the throat, is to be taken forth; this part of the instrument must be made twice as big as it is here printed. The broader part of it (B) serves to spread plaisters upon linnen or leather, for want of a *spatula*; as also for a safe separation of the *Pericranium* from the bone, before the *Trepan* and scraping instrument be applied to the skull, when there is a defect of nails of the hands of the thumb and fore-finger a little too short; or there wants a haft of that pen-knife printed underneath Tab. XII. Fig. IV. Yet with the longer nails, the *Pericranium* is much safer drawn off from the skul, then by the haft of the foresaid pen-knife, or by the parting knife of *Paræus*, or by this broad part of the puller.

Fig. II. is a pair of pincers to cut out with a Parrats beck (*a*) upon which is fastned a screw with a broad head, which will not suffer the bill to go in so far as the *dura mater*, (for I use it in fractures of the skul) whence not unfitly it may be called ἀβαπτίστη: on the lower part it hath a handle (*c.*) which is turned about the screw (*d.*) Fig. III.

Fig. III. is a Parrats bill out of its socket (*d.* Fig. II.) that the Artist may more plainly see the screw of the bill.

Fig.

TABVLA. V.

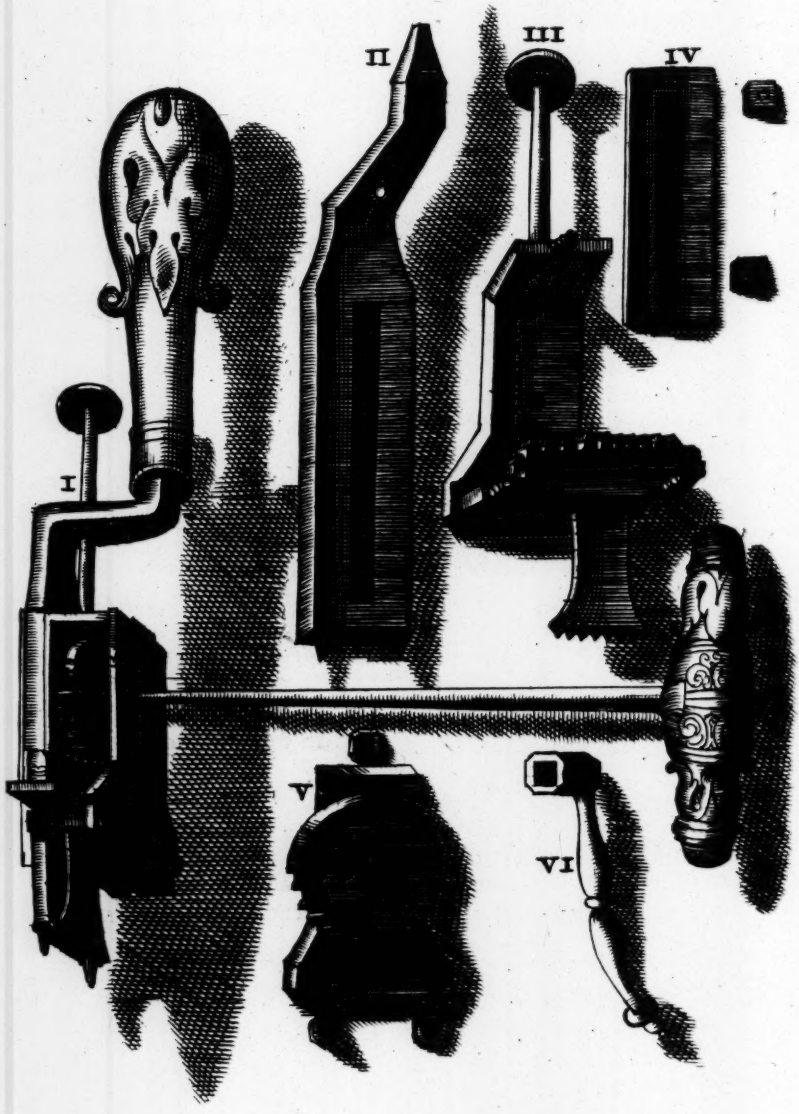


Fig. IV. is a pair of pincers with a Vultures bill, and it is in its pipe, by whoſe ſcrew it is carried about.

Fig. V. is a Vultures bill deſcribed without its pipe, with theſe two ſorts of pincers, as alſo with thoſe which I cauſed to be printed underneath Tab. XI. Fig. I. and II; and Tab. XIX. Fig. I. any ſmal peece of a bone in the cure of wounds of the head, is taken forth partly by breaking of it, partly by cutting into it: all which differ in magnitude and forms, according to the variety of bones which muſt be removed.

The V. Table.

Of the turning ſaw, whereby the diſtance between two holes is cut aſunder.

Fig. I. is a turning little ſaw provided with two wheels with teeth, and it is moſt uſefull to cut out the diſtances of two or three holes made with the Trepans. For where the Levitors above deſcribed and printed, by reaſon of the narrowneſs of the chink (which is almoſt alwaies joined with late impreſſions made upon the ſkuls of perſons that are at full years) have not ſpace ſometimes, there is need that two or three holes be made in the skul with Trepans, the diſtance between them is cut forth with this ſmall ſaw, without any danger of hurt, whereby the Levitor may be the more commodiouſly put down, and the ſmall peece of the bone, which oft-times pricks the membranes, may be taken forth. The parts of this inſtrument which I invented, where they are joined, they are marked with ſmall letters; where they are parted, with great letters.

Fig. II. is a plate of iron *A* cut forth in the middle long waies, which above hath the handle *B*, and the hole *C* in the bending of the plate; but beneath on both ſides a sharp edge *D*, whereby it ſtands firmly on the naked skul.

Fig. III. is a ſmall pin with a broad head, which is marked with an Aſteriſm, and paſſing through the hole *C*, Fig. II. it is faſtned in the capſula *E*. This capſula *E*, is faſtned regularly to the iron plates hole *A*, Fig. II. by the means of a ſmall latten plate Fig. IV. by two ſcrews, which the capſula hath on the back ſide, that are correſpondent to the latten plate; and by ſo many little knots, that the Chyrurgian, by help of the ſmall pin, may at his pleaſure in his actual operation move the capſula up and down; the axis of the

the ſmall wheel is put into the hole *H*, as appears by Fig. V, and the center of the ſmall wheel. The little plate *I*, is toothed above, and there it receives the wheel, beneath *L*, it is equal on both ſides, that the ſmall ſaw *K*, may be fit to move regularly up and down in the capſula, and the fiſſures of the Fig. V. *M*, by the help of the wheel and the handle. The latter plate *N*, is hollow in the middle, and hath two ſcrews *O*, by means of this plate, the little ſaw, when the inſtrument is perfectly ſet together, is drawn equally hither and thither.

Fig. IV. is a latten plate, with two little mothers, which I called before little knots.

Fig V is a ſmall wheel half toothed *P*; and the half capſula *Q*, together with three holes *R*: wherewith it receives three ſcrews, Fig III. faſtned with three knots or little mothers.

Fig. VI. is a key whereby the inſtrument is divided into its parts, and again is ſet together with the ſame. The letter *T*, ſhews the axeltree, that perforates the capſula and ſmall wheel in the back part; and *V* is the mark for the handle.

The VI. Table.

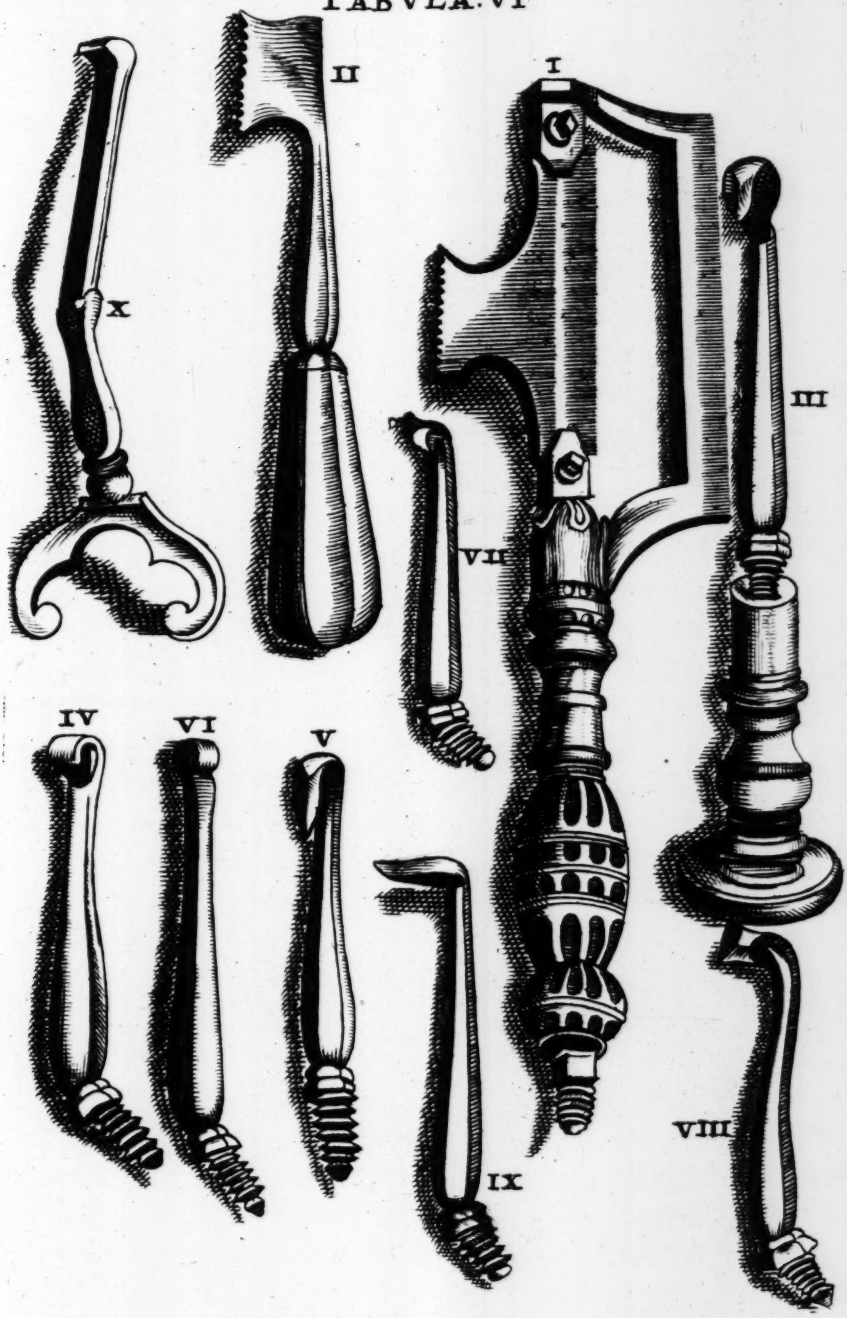
Of ſtraight ſaws, and divers ſcraping tools, wherewith the skul being rotten, or having a fiſſure, is ſcraped away.

Fig. I, and II. are ſtraight ſaws, with which ſome men cut away the diſtances between the holes made in the skul with the Trepans, and abolish rifts like hairs that do not penetrate, and ſcrape away the rottenneſs of the *cranium*.

Fig III. deſcribes three ſorts of ſcraping tools, of *Galen lib. 6. meth. med. cap. 6.* the firſt is hollow which he calls κυκλισκον, or a ſcraping inſtrument to cut out, the figure whereof we ſee above Table II. Fig. IX. another which in the lower part of it repreſents a lenticular, which he calls φακωτον; the uſe and deſcription whereof we find in the Table newly quoted, Fig. VIII. exactly printed; the third fit to raſp away, which the Greeks call ξυστρας; and the Latines *ſcalprum raſorium*, or paring tool, and the illiterate a raſp. The modern Chyrurgians make uſe of this third ſort of ſcraping inſtruments, in proving and ſcraping away the fiſſures of the skul as ſmall as hairs, or for ſuch that is doubtful whether they penetrate or not; and they have invented divers forms of it, according as the

place

TABVLA. VI



place or chink may happen to fall out. As for example a hollow one, as you ſee Fig. III, IV, V. and VI, a half moon, as Fig. VII. sharp pointed as Fig. VIII; laſtly a plain one as Fig. IX, and X. The Chyrurgian muſt have four ſcraping tools at leaſt, of each form, alwaies ready, leſt for want of them he be conſtrained to deſire them from others; or may loſe the occaſion of his operation, which every man knows to be deſperate to the danger of his Patient, and loſs of his own reputation. When a rotten bone is to be ſcraped in the extream parts, as the thigh, the shin bone, the shoulder bone, or the arm bone, greater and ſtronger raſping tools muſt be provided for them. Now every raſping inſtrument is made of moſt pure ſteel, that it may have an edge that will perfectly raſp away. The Ancients did fit the proper hafts to every raſping inſtrument; but the modern Chyrurgians take a contrary courſe yet, in my judgment not ſo right as it ought to be, for they provide but one handle of wood or bones, at the bottom whereof the hole hath a ſcrew, wherewith it receives all the ends of the raſping tools that are turned with ſcrews equally; as you may ſee clearly by Fig. III. and by the reſt.

The VII. Table.

Of various inſtruments to make a ſeton in the nape of the neck; namely, four kind of Pincers with a needle, and one armed with a ſeton; of cauteries alſo, with which the hinder part of the head is burnt into.

FIG. I. is a pair of Pincers, which neer to the upper hole, which is neither too narrow nor too broad, hath a wide and circular cavity, and an iron ring, that of it ſelf binds faſt the inſtrument or pincers, which is then neceſſary when the Chyrurgian hath no ſervant, which may deliver to him the needle very red hot, to make a ſeton in the nape of the neck.

Fig. II. is a pair of Pincers which above hath the like cavity; but for want of a ring, it is not cloſed of it ſelf, but by the Chyrurgian ſo much as it ought to be. They uſe theſe pincers when behind the neck that is to be perforated, the part is very fleshy and fat; by which the skin laied hold on, when it is thick, goes within the circle, that it cannot ſlip away.

TABVLA VII

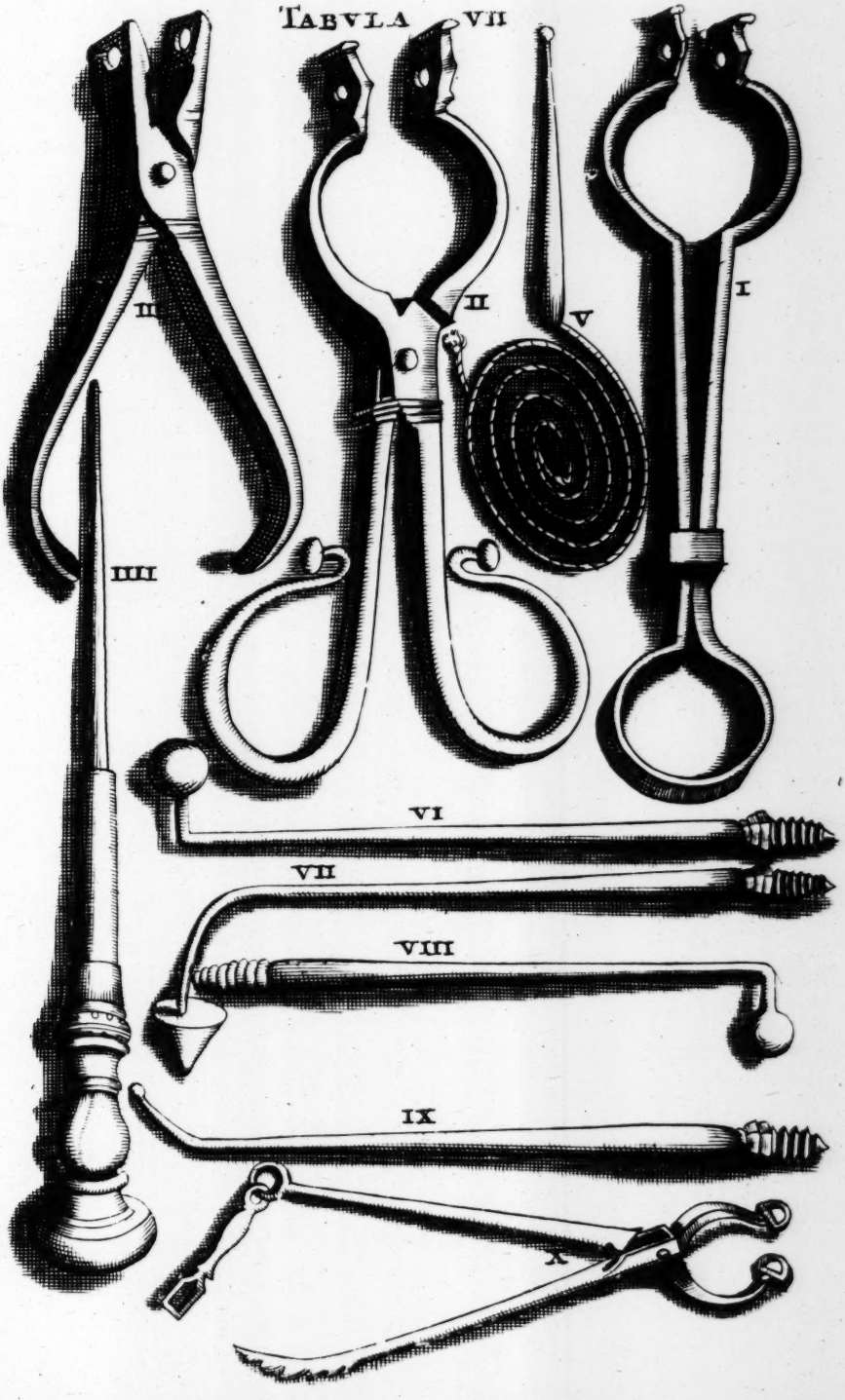


Fig. III. is a pair of Pincers, which hath neither cavity as Fig. I, and II; nor ring as Fig. II. hath; with that the Chyrurgian laies hold of lean peoples necks, untill he hath perforated them with a red hot needle delivered to him by his ſervant.

Fig. IV. is a needle for the ſeton; which muſt neither be too long, leaſt the point ſhould miſs the oppoſite hole; but it is a hand breadth in length, neither is it very ſmall, or groſs; but it is anſwerable to the holes of the aforeſaid pincers, only a little ſmaller; and ſo being made very red hot, it paſſeth through moſt nimbly, and makes a ſeton almoſt without pain.

Fig. V. is a long narrow point, that hath faſtned to it a ſeton or round line, of purple ſilk, which drews to the middle is left in the hole; to the point is faſtned a ſmall button of wax, that it may paſs through without delay or pain.

Fig. VI, VII, VIII and IX are various iron inſtruments without handles; with which, being made very red hot, infants and children are burned behind the neck, in whom there appears any token of the Epilepſie, Apoplexy, or Vertigo. The ſame burning ſometimes is a remedy for people grown in years, when they are affected with the ſame diſeaſes.

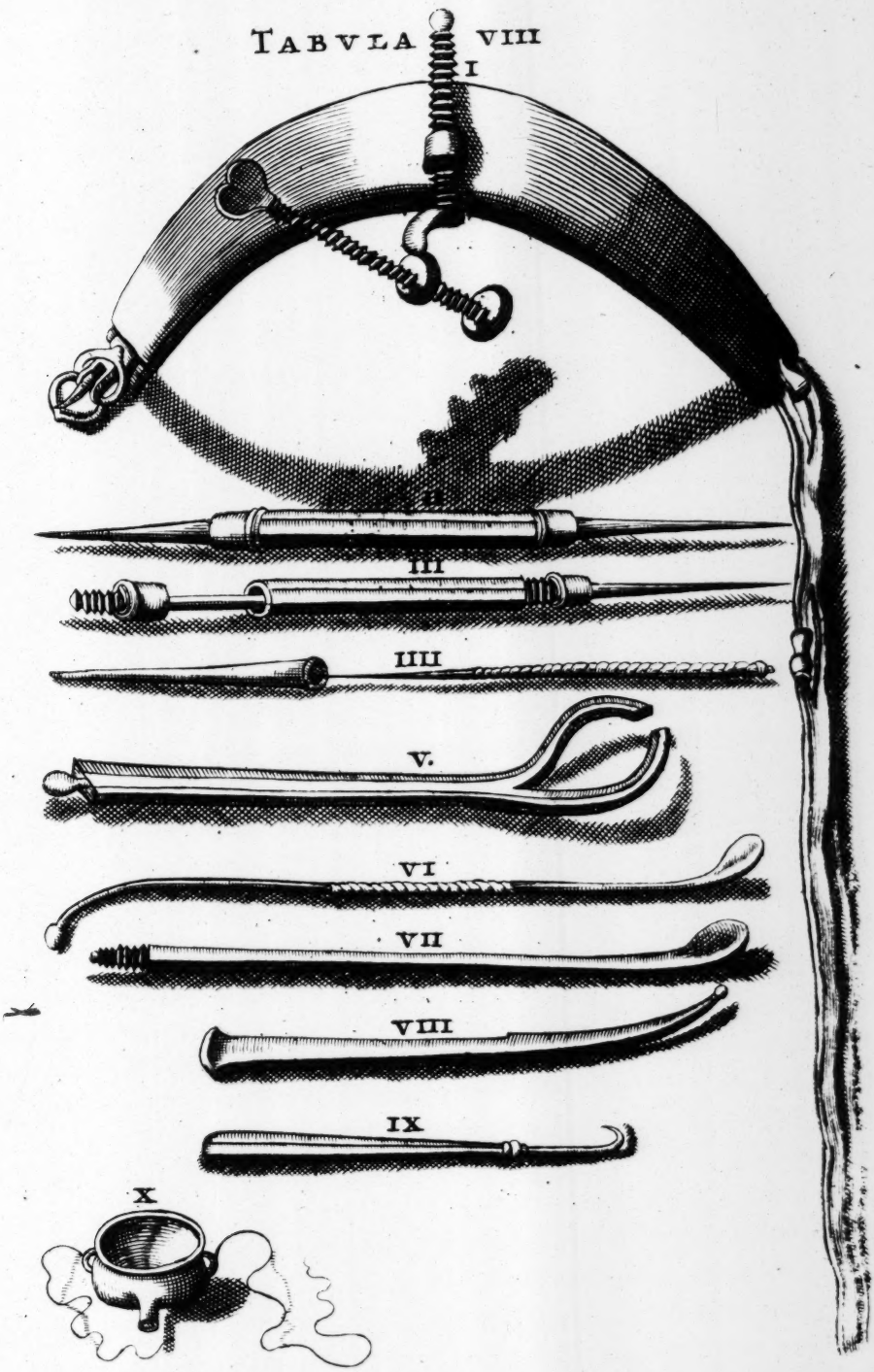
Fig. X. is a pair of pincers that faſtneth it ſelf, with which the skin is laied hold on, if a ſeton muſt be made by inciſion: This inſtrument ought to be half as great again as it is here pictured; but the pen-knife anſwerable to theſe pincers, and printed at its juſt magnitude, is ſeen underneath, Table XVIII. Fig. IV; and in *Guil. Fabritius Hildanus*, Cent. 1, Obſ. 40.

The VIII Table.

Of the Inſtrument with hair; ſilver needles fit to couch a cataract; the ring that holds the eye faſt: Probes; the crooked Pen-knife; the sharp little hook, and the ſmall veſſel of glaſs to be put upon the eys.

Fig. I. is a hairy inſtrument, crooked; and the inſide is wrapt about with cotton and black lawn; which outwardly, by reaſon of two buckles and latchets, hath a bolt with a broad head, wherewith the hollow ulcer in the greater canton of the eye is preſſed together. *Hierom. Fabritius, ab Aquapendente*, invented this inſtru-

TABVLA VIII



inſtrument; whereof he makes mention, when he treats of *Ægylops* to be cured by Chirurgery.

Fig. II. sheweth two ſilver needles, that are made to put down a ſuffuſion, which are inſerted into a handle of ſilver which is an octogon, that on both ſides hath a perforated glance, or ivory head, through which the ſilver needles paſs.

Fig. III. is that open handle, the needle whereof is inſerted in one part; and on the other part, ſomewhat of the ſcrew is ſeen.

Fig. IV. is a needle fitted for the cure of a Cataract, with a haft and caſe of ſilver.

Fig. V. is a brazen ring (others commend one of lead) to hold the eye firm for the cutting forth of a haw, and for other operations to be perforated in the eye.

Fig. VI. is a long probe round, and made of ſilver, that it may be bended upon neceſſary occaſion; the one end whereof is the broader, and the other hath a round knob very well polished. With the broad end of this probe, which *Celſus lib. 7. cap. 7. de ancyloblepharo oculorum vitio*, calls the probe toward you; not only the growing together of the eye-lids is cured, but alſo powders and plagets anointed with ointments are applied to wounds. The round end is uſed by Chirurgians, to ſearch out the ſtate of wounds and fiſtulas.

Fig. VII. is a probe made with a broad end for the aforeſaid uſes, and a sharp pointed ſcrew, which is wrapt over with cotton to wipe away the filth in wounds, ulcers; but chiefly in fiſtulas.

Fig. VIII. is a crooked Pen-knife that cuts but upon one ſide, to the point whereof there is faſtned a ſmall ſilver knob. *Euclides Tarentinus* and *Celſus* uſed this knife to part the eye-lids which were grown together with the skins of the eye.

Fig. IX. is a very sharp little hook, and at the point, by degrees, bent ſomewhat inward: which is moſt convenient both to lift up the eye-lids, and to raiſe up the haw in the eye.

Fig. X. is a ſmall glaſs veſſel for the eys, ſomewhat long, and is to be made of Cryſtal, ſo that it may exactly anſwer to the ball of the eye; and may contain medicaments poured in by the tunnel, that they cannot run out. *Hierom Fabritius ab Aquapendente*, invented this ocular inſtrument, and deſcribed it more at large in his tract of ſuffuſion, to which I refer you.

The

The IX. Table.

Of the right and crooked pincers for the Polypus, and the pipes that are put into the noſe, with their pin; the inſtrument wherewith the Uvula is cut away; the ſpoon that is to be uſed when the Uvula is fallen; the dilatory to open the mouth, and the Cranes bill that is blunt.

Fig. I. is the ſtreight inſtrument of *Hieron. Fabritius ab Aquapendente*, for to draw forth a Polypus; it is made of ſteel, and is convex outwardly, but inwardly concave, which hath an edge inwardly bent backward, wherewith we can cut nothing but the Polypus now laid hold on.

Fig. II. is a bowed inſtrument, wherewith the Polypus is cut and drawn forth, which by the holes of the noſtrils tends in the palate to the throat, and threatens to choak a man.

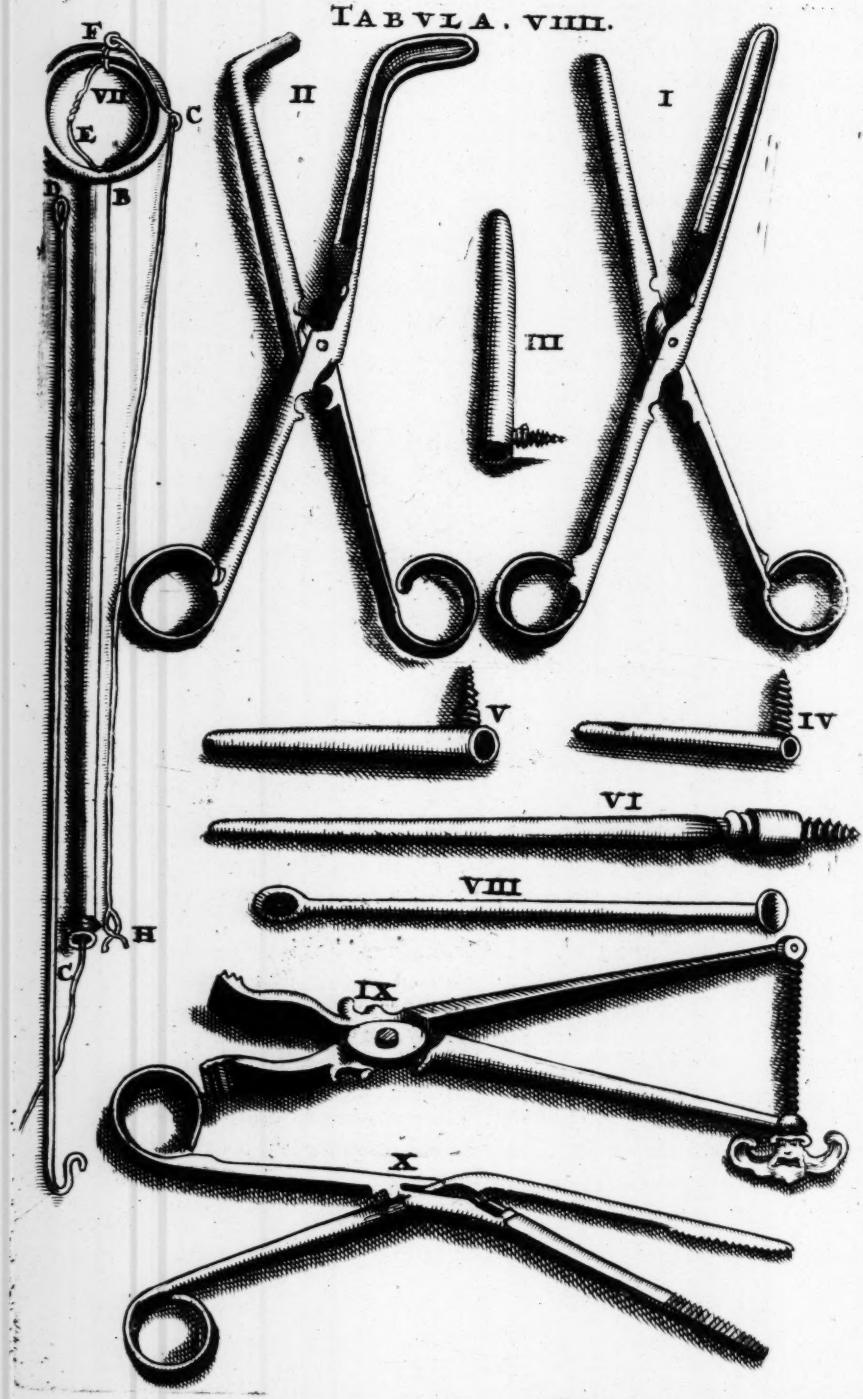
Fig. III. is a ſolid iron pipe, which is thruſt ſo deep into the noſtrils, that it equals the length of the ulcer, which is called *ozæna*; afterwards a very red hot iron is thruſt into this pipe, that is ſound every where and without any holes; whereby the pipe waxeth hot, and the ulcer is dried up.

Fig. IV. is a pipe with a hole in the ſide, to conſume the hard callous of the wound that is in the ſide of the noſtrils, by an actual cautery, or is moſt convenient to dry up the bone which is corrupted.

Fig. V. is a ſmall pipe with a hole at the top, which is put into the noſtrils; when, after the cutting and drawing forth of the Polypus, the blood running forth in great aboundance, muſt be ſtopped by manual operation, by burning: which is alſo uſed when the top of the noſtrils muſt be burnt, for the removing of the bone corrupted.

Fig. VI. is a ſtile of iron, which being made red hot is thruſt into the aforeſaid pipes, and is preſently drawn forth again; which thruſting it in and pulling it out, muſt be repeated ſo often as need requires. To perform this operation ſpeedily, the Chyrurgian muſt have by him at leaſt two ſuch pins; which, being heated in their turns, he may thruſt into the pipe. But note that the ocular veſſel of the Table VIII. Fig. X. and theſe pipes that are to be put into the noſtrils, could not be printed in their juſt magnitude; becauſe

TABVLA. VIIII.



they muſt be made greater or leſs as the age of the Patient is, and the parts affected are in greatneſs.

Fig. VII. is an inſtrument by which the Uvula is cut away; it is made of latten, which in the upper part hath a circle ſomewhat hollow, A, in the lower part the pipe B, through which the end of the thread C, (after that it is placed into a half knot turned about E, and into the concave part of the ring, that it may not remove here and there) is drawn by means of the ſtile D perforated above; the other end of the thread is drawn through two rings annexed to the circle, and is faſtned to the lower ring of the pipe. *Guill. Fabritius Hildanus* Cent. 2. Obſerv. 21. was the firſt that found out this inſtrument, and deſcribed it; with which, being correct, I eaſily tied the Uvula of one of the Emperour's Souldiers, that was infected and corrupted with the French Pox, and I cut it off with good ſucceſs, at *Vienna* June 8. in the year 1637.

Fig. VIII. is an inſtrument to be applied to the Uvula which is fallen; that is likewiſe of latten, namely a ſmall ſpoon, but it muſt be made half ſo much greater as it is here ſet forth, whoſe handle muſt be hollow, and nine inches long, and is joined to the lower part of the ſpoon: This ſpoon is filled with powders that are drying and digeſting mingled together, and it is put under the Uvula relaxed: then the Chyrurgian takes the lower end of the pipe in his mouth, and by blowing ſcatters the powders all about upon the Uvula and the Palate.

Fig. IX. is an inſtrument to open the mouth wide with a ſcrew; and is printed out of *Paræus* his *Lib.* 9. *Cap.* 25. wherewith the teeth, faſtned and joined forcibly together, are drawn aſunder, that meat may be given to the ſick, leaſt he ſhould perish by hunger.

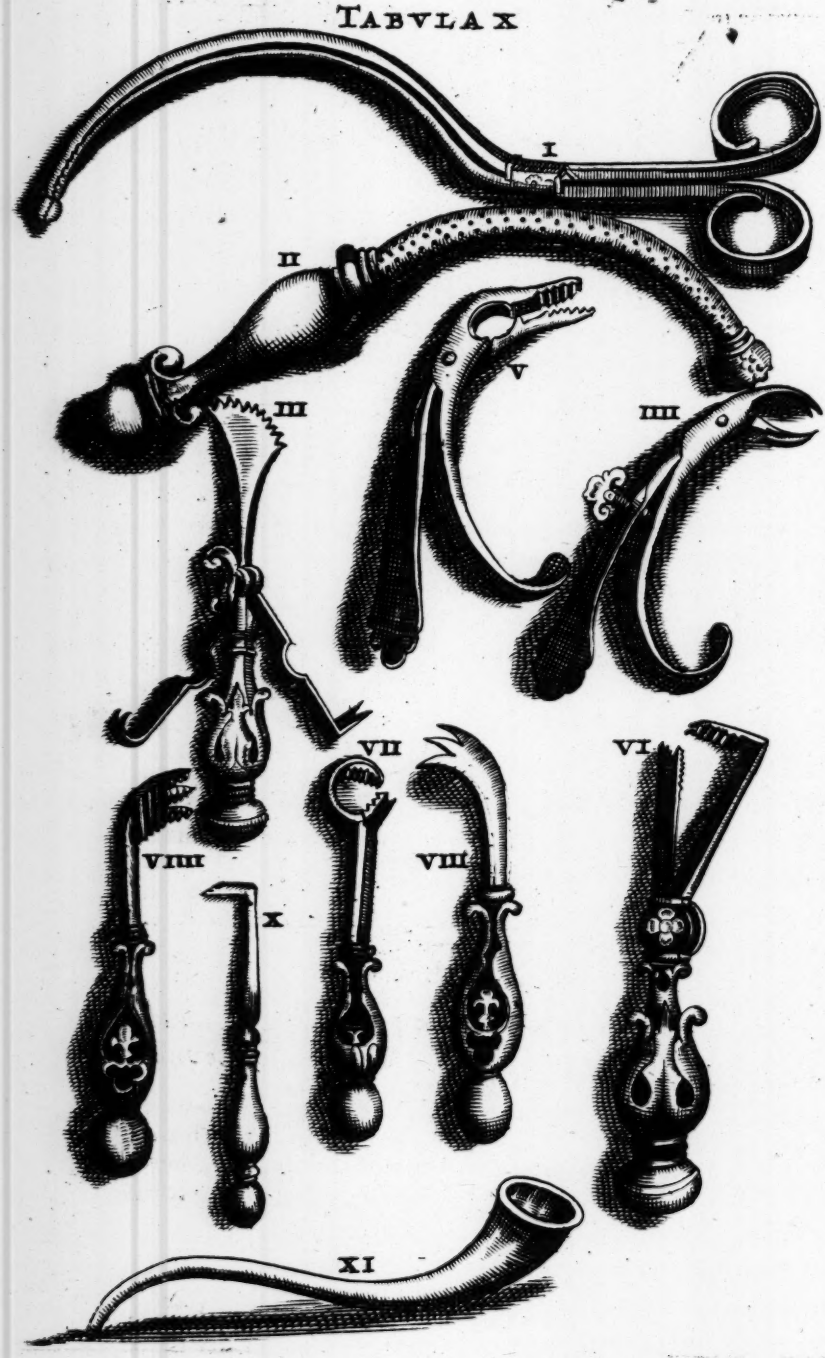
Fig. X. is a Cranes bill with teeth, and directed to an obtuſe angle; fit to take forth ſmall bullets, and ſtrange bodies, and to draw them forth of wounds.

The X. Table.

Of an inſtrument like to a puller; a pipe to be put into the throat; the Pellican pincers; the Crows bill; Levitors with three diviſions, and of the Tunnel.

FIG. I. is an inſtrument to pull forth ſmall bones in the throat; like that Table IV. Fig. I. namely a pair of pincers bended into a

TABVLA X



ſemicircle with teeth, and a ſmall button at the end; wherewith ſmall bones, thorns, and other ſtrange things that ſtick at the bottom of the throat, are wont to be taken forth. When the moſt famous *Hierom. Fabritius, ab Aquapendente*, makes mention of this inſtrument in his Chirurgery concerning the jaws, he underſtands ſome kind of inſtrument that is long and ſlender, which is twofold, one ſtreight, shadowed forth Table IX Fig. X. another crooked, as this is; yet both of them for their faculty of taking and drawing forth, may well deſerve the name of pullers.

Fig. II. is a pipe of ſilver, crooked, that it may be put into the throat; it is as thick as a Swans quil, and one foot long and a half, or thereabouts: it is all full of holes, and at the end of it, it hath a ſponge that is new, and as great as a ſmall nut, firmly bound to it. Which *Guill. Fabritius Hildanus*, Cent. 1. Obſerv. 16. uſeth with happy ſucceſs to draw out thorns out of the jaws, and middle of the weſand pipe; where he teacheth the manner of the operation by the pipe here printed. The following iron inſtruments are uſed for hollow teeth, or ſuch as are looſe, or that are very painfull ſometimes, to take them forth when people are in the moſt bitter pains. Whence

Fig. III. is a pair of Pincers, named a Pellican, becauſe the beck of it is like the bill of the Pellican, a bird ſo called; but they uſe it to draw forth the grinding teeth.

Fig. IV. is a common pair of pincers for the teeth, the Italians call it *cagnolo*, becauſe it holds as faſt as a dog bites.

Fig. V. is a pair of pincers that repreſents a Crows bill; with which the roots of the teeth are drawn forth: Of which *Cornelius Celſus* (whom, as being admirable in all Chirurgical operations, *Fabritius ab Aquapendente* counſels us to ſtudy in both night and day) *Lib.* 7: *cap.* 12. concerning teeth, writes thus; as oft as when a tooth is taken forth, the root is left behind, that muſt forthwith be drawn out alſo with a pair of pincers, the Greeks call ῥιζάγρην.

Fig. VI and VII. are the patterns of toothed pincers, that ſerve to pull out teeth, which neither the Pellican nor common pincers can draw forth.

Fig. VIII and IX, are Levitors divided in three parts, becauſe they commonly have three ſpears to thruſt forward and to take out the cutting teeth, and the dog teeth which are faſtned in the holes of the gums with one root alone.

Fig. X,

Fig. X, is a tooth-picker, with which the gum is ſeparated from the teeth, that they may be pulled out with leſs danger and trouble. That therefore the drawing out of a tooth may ſucceed well, obſerving what muſt be obſerved, place the Patient on a low place, with his head lying between the Chirurgian's legs; then the Chirurgian ſhall cut deep round about the tooth to be pulled out, parting the gum from it with his Tooth-cutter; and if the tooth ſhake when it is parted from the gum, it muſt be ſhaken, and thruſt out forward with the Levitor put under it; but if it ſtick faſt, and move not after it is ſhaken, it muſt be laied hold on with the toothed pincers, and pulled forth (ſometimes this way, ſometimes that, as the greatneſs, ſcituation, and figure of the tooth ſhall ſeem to require. In the uſe of theſe toothed pincers (ſaith *Ambroſ. Paræus Lib. 16. cap.* 27.) I ſhould deſire the Tooth-drawer to be very expert and induſtrious; for with theſe, unleſs a man be very cunning, and know the uſe of them, it can ſcarce be avoided, but that at one pull he ſhall bring out three teeth, and ofttimes leave that tooth unſhaken that cauſeth the pain.

Fig. XI. is a Tunnel or a pipe of ſilver, whoſe narrower part is thruſt between the outmoſt gum of the Patient, who hath his teeth faſt ſhut together, and the broader end receives liquid meats and drinks and lets them down to the *œſophagus*.

The XI. Table.

Of another ſort of Pincers with a Parrots and a Crows bill; of the ſpeculum oris; of an inſtrument to cut away the caruncles of the mouth; and of the ſtreight Cranes bill.

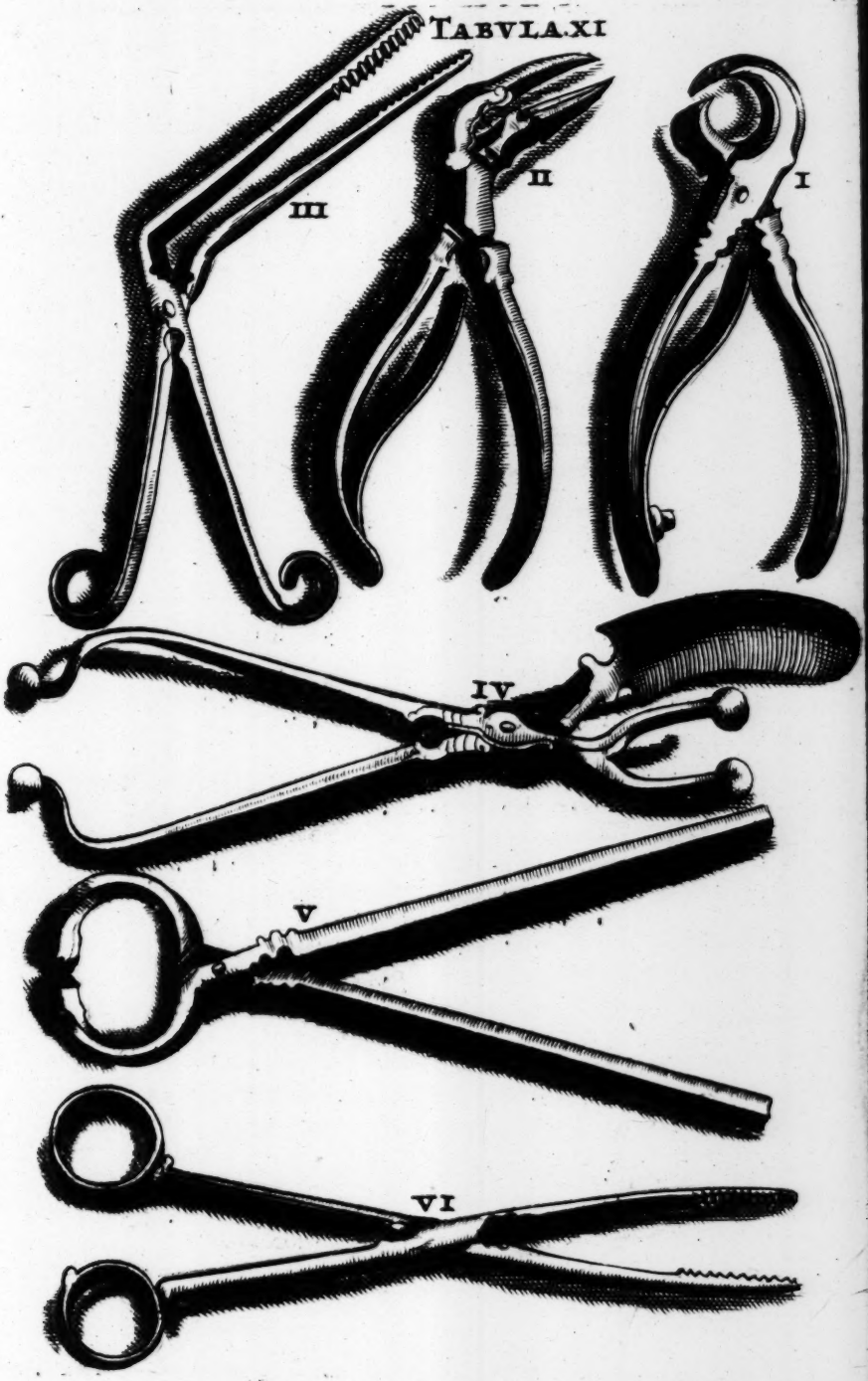
Fig. I. is another pair of pincers with a Parrots bill, which we uſe in fractures of the ſkul, when a ſplint of the bone that muſt be taken away, either preſſeth or pricketh down the membranes of the brain.

Fig. II. is an inſtrument with a Crows bill made artificially for the ſame end. Yet note that both theſe pincers muſt be made a third part greater then they are here deſcribed.

Fig. III. what inſtrument this is, is manifeſt by Table IX. and Figur. X.

Fig. IV. is called *ſpeculum oris*, wherewith the tongue and lower chap is preſſed down, that the diſeaſes of the mouth may be ſeen exact-

TABVLA XI



exactly, and handled with convenient inſtruments and medicaments. But it was chiefly made to preſerve the teeth of furious and aſtonished men, drawn aſunder untill ſuch time as they have ſwallowed down meat and drink ſufficient.

Fig. V. is an inciſion inſtrument like to pincers, with which are cut forth tumors. and caruncles of the mouth.

Fig. VI. is a pair of pincers with a Cranes bill, toothed and ſtreight, which may ſerve inſtead of a puller.

The XII. Table.

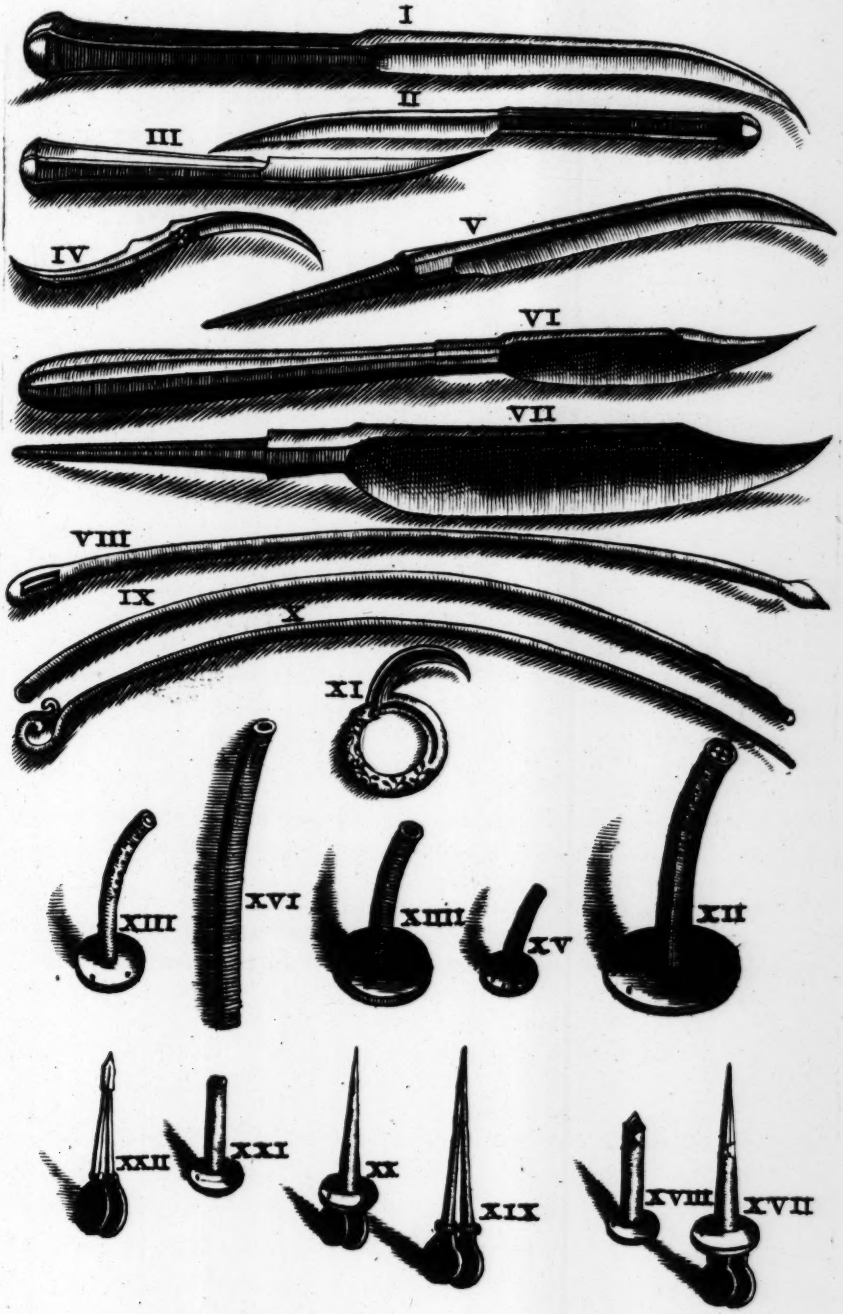
Of crooked knives; a knife with two edges; a very long needle; a golden ſyringe; the Pen-knife with a ring; of pipes with ſhoulders, and holes through; a golden pipe to be thruſt into the Urinary paſſage; and inſtruments wherewith the belly and ſcrotum of hydropical perſons is opened.

Fig. I. is a little Pen knife, called by the Greeks Σκολοπαμαχαίδιον, from the bill of that bird which the Latines call *Galinago*, a Woodcock, in Greek Σκόλοπαξ, becauſe the inſtrument is long and ſomewhat crooked at the end like a Woodcock's bill; with this inciſion knife wounds of the Thorax that are too narrow are dilated, and great impoſtumations are opened. *Fabritius ab Aquapendente*, commends the ſame for opening the Abdomen of hydropical perſons under the navel, to let forth the water. *Note*, that this Pen-knife, for the opening of wounds of the Thorax, requires a ſmall button, (like to that the Pen knife hath of ſilver, Table VIII. Fig. VIII.) of iron at the point, for fear the lungs ſhould be offended with the point of the knife.

Fig. II. and III. are Pen-knives crooked at the point, and like to the Woodcock's bill knife of the Greeks, wherewith mean Fiſtulaes in the habit of the body are conveniently cut; whence alſo they are called uſually συρίγγοτόμοι.

Fig. IV. is a crooked Pen-knife, which the Italians call *gammaut*; and it cuts on the hollow ſide, and is blunt on the convex ſide of it. I uſe this moſt frequently for all inciſions which is commonly made in every impoſtume; but principally in ſmall inciſions. This knife hath a haft of bone, which is convenient for to divide

TABVLA XII.


I
II
III
IV
V
VI
VII
VIII
IX
X
XI
XIII
XVI
XIIII
XV
XII
XXII
XXI
XX
XIX
XVIII
XVII

divide and ſeparate any thing from another: Whence it is that *Celſus lib. 7. cap. 16. de tumoribus tunicatis*, ſaith, then with the handle of the knife, the coat (which after the cutting of the skin preſently shews it ſelf white and ſtretched out) is to be drawn away from the skin and flesh, and to be cut away with that it contains in it: With this alſo is the *Pericranium* parted from the skul, and the haw from the eie.

Fig. V. is a Woodcock's bill without a handle.

Fig. VI. and VII. are double knives, which at the end reſemble the fashion of mirtle leaves; we uſe them to cut off womens breaſts that are cancerated.

Fig. VIII. is a moſt sharp needle, long and double; wherewith breaſts to be cut off are pierced through at the root.

Fig. IX. is a pipe made of gold of Hungarie, and perforated with many holes.

Fig. X. is a ſtile made of the ſame mettle, which is thruſt into the former pipe, that of them both, one inſtrument may be made, which in the wounds of the Thorax is profitably applied for a ſyringe, and draws blood out of the Thorax which is not congealed, or thin corruption. This inſtrument is dactile, and may be bent into a right or oblique angle, and may be thruſt into the Thorax, where there is a wound made of purpoſe, or by accident; that it may reach the blood not congealed, or the thin corruption. Let the Chirurgian draw forth the pin out of the pipe, and preſentlie the matter contained in the Thorax will run forth. This way to draw thin matter out of the Thorax ſucceeds excellent well; where, by reaſon of debility of forces, or ſome other cauſe that hinders it, we may not make inciſion between the fift and ſixt rib, according to *Paulus*; or between the third and fourth, according to *Hippocrates* his rule.

Fig. XI. is that crooked knife which may be hid in a golden ring; with this Apoſtems are cut in the face or cheeks of children; and in the breaſts of timorous women; leſt ſeeing the knife they ſhould be frighted, and ſo not ſuffer the impoſtume to be opened.

Fig. XII, XIII, XIV and XV. are pipes with ſhoulders, and perforated with many holes, that they may hold the wounds of the Thorax open; they are made with ſhoulders, leſt being put into the wound, whileſt the Patient breaths, they ſhould go into the Thorax; and they have ſo many holes, that by it through them all, as need requires, the foul matter may iſſue forth.

Fig. XVI. is a pipe made of the gold of Hungarie, which is thruſt into the Urinarie paſſage, before the making of water, that the

the Urine may come forth by it; and ſo that moſt cruel pain and heat may be abated, which the Patients feel when they make water without the pipe, by reaſon of an ulcer grown in the Urinary paſſage, from a virulent *Gonorrhæa*.

Fig. XVII. is an inſtrument that conſiſts of a needle with three points (*a*) and the pipe with ſhoulders (*b*) with which the navel of hydropical perſons, and the ſcrotum in a watrie hernia are opened to let out the water. This inſtrument is thruſt in as far as the aſteriſin upon the pipe; after that the needle is drawn out, and the ſmall pipe thruſt in as far as the ſhoulder, is left in the abdomen without all fear or danger.

Fig. XVIII. is the ſmall pipe alone, and printed without the needle.

Fig. XIX. is the needle alone, ſet without the pipe.

Fig. XX. is a round needle with its ſmall pipe; wherewith, for want of a needle with three points, the navel of hydropical perſons is perforated with the like ſafety; and ſo is the ſcrotum of ſuch as have hernias filled with water.

Fig. XXI. is the pipe of the round needle by it ſelf.

Fig. XXII. is the round needle alone.

The XIII. Table.

Of the Syringe with a right pipe, and crooked pipe, one for the matrix, and one for the ears; a gliſter pipe; the ſilver cap, and wax candles.

FIG. I. is a ſyringe to draw out, or to ſquirt any thing in, often uſefull; that which hath this crooked pipe join'd to it, may receive the ſtreight pipe Fig. II. when the crooked is not convenient to draw forth or caſt in any thing.

Sometimes to this ſyringe there is fitted a pipe Fig. III. that hath many holes perforated in it; which the Greeks, and *Galen lib.* 9. *de compoſ. medicam. ſec. loc. cap.* 8. and *lib.* 5. *meth. med. cap.* 4. call *Metrenchytam*; women that will not eaſily give way to others, for ſhame, to caſt a clyſter into their matrix, conveniently uſe this inſtrument; wherewith they can eaſily inject divers liquors to cure divers affections of the womb, and the cauſe of it.

Fig. IV.

TABVLA XIII

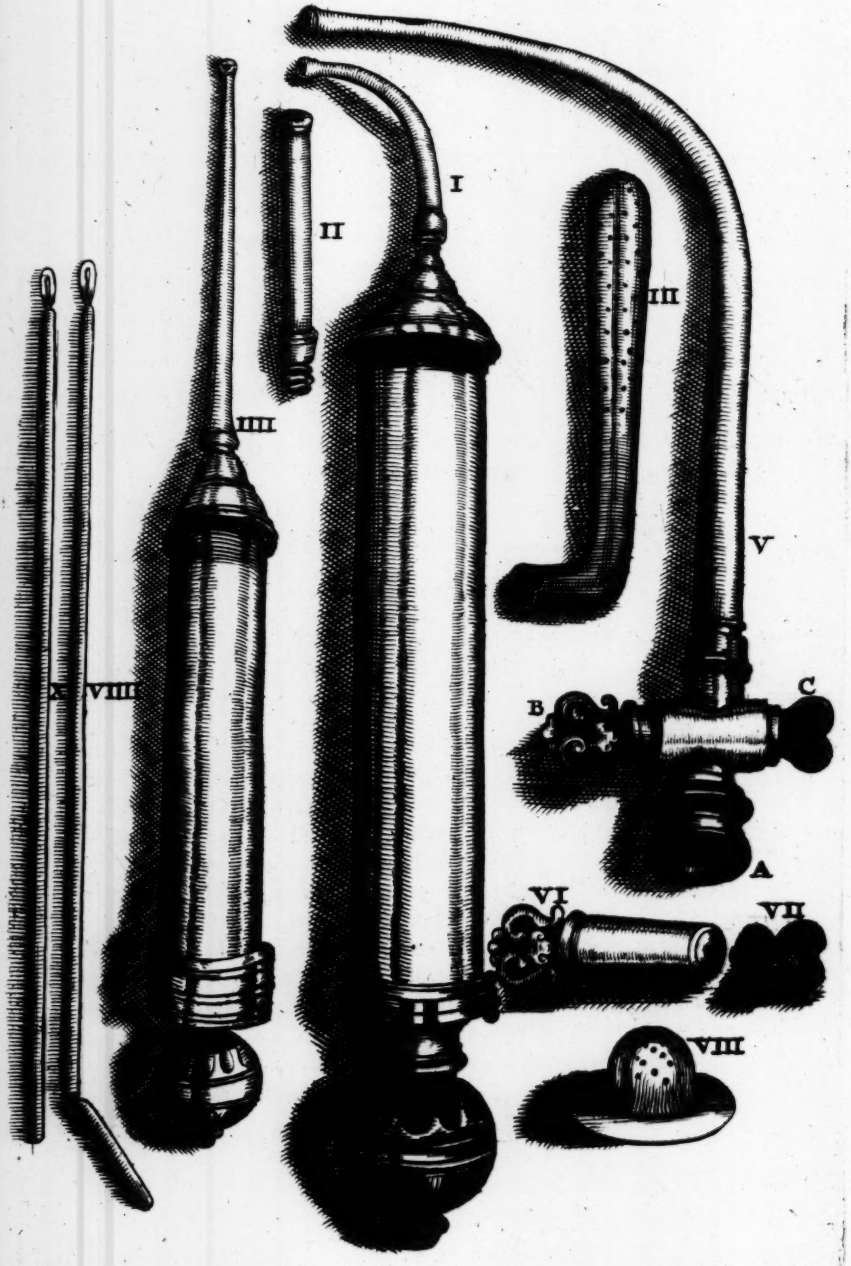


Fig. IV. is an ear Syringe, called *Otenchyta*, whereby liquors are injected into the organs of hearing, to cleanſe and heal ulcers there.

Fig. V. is called *Enterenchyta*, namely a pipe of latten crooked like to a Catheter; which let them care to provide, who would rather give themſelves a clyſter, than receive it from any one elſe; eſpecially if often uſe of clyſters be needfull, by reaſon of the diſeaſes of the guts; eſpecially of the right gut.

Fig. VI. is the lock of the ſaid crooked pipe B, Fig. V. by help whereof the liquor of the clyſter in the bladder, which about the letter A Fig V. is to be tied after the vulgar manner, is held ſo long as the Patient pleaſes, as he will open or ſhut the pipe.

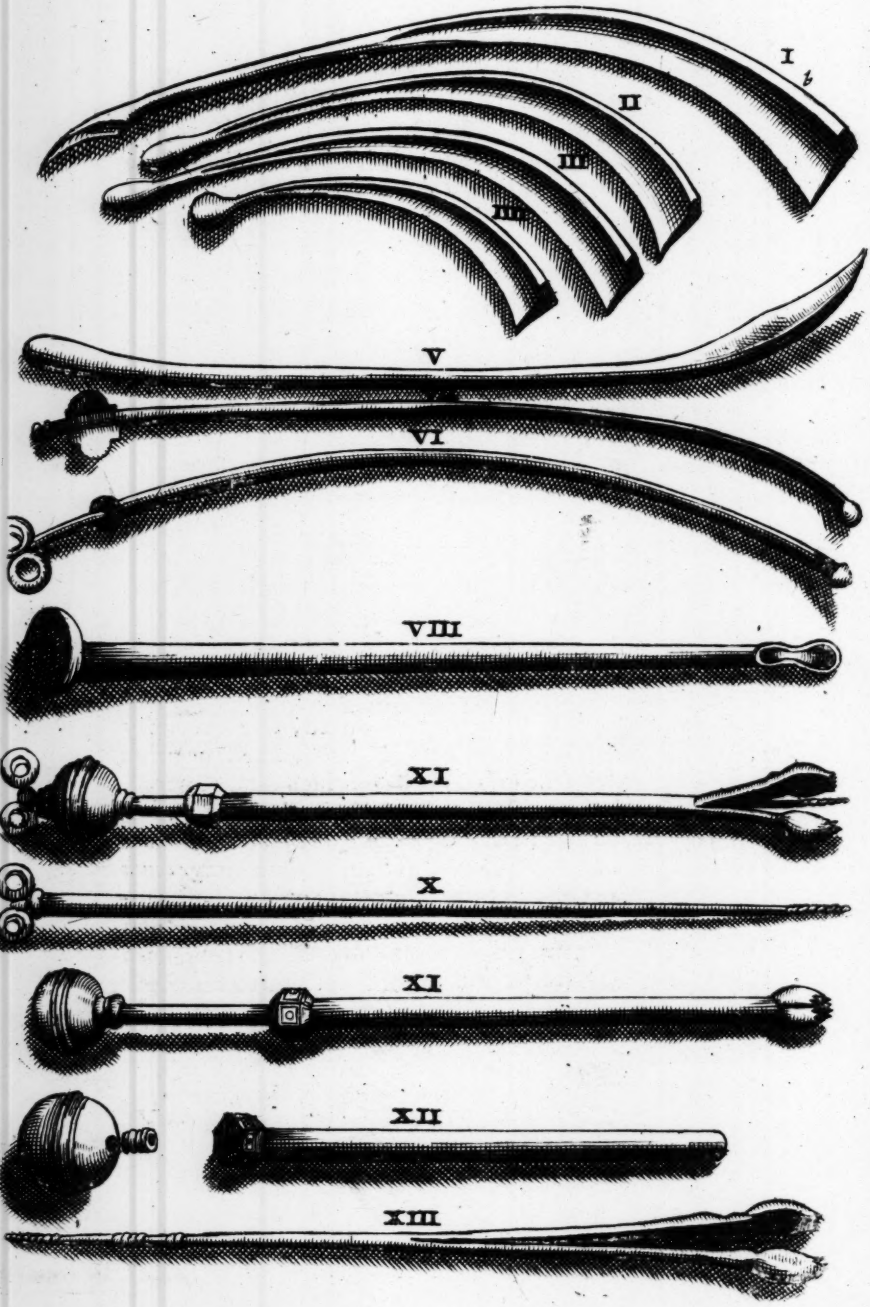
Fig. VII. is a nail with a broad head (*c*) Fig. V. which is ſcrewed into the lock B, Fig. V. that nothing of the clyſter, in turning the key about, may run forth, which may foul the ſheets. This inſtrument, as it appears to any man, differs much from that which *Iohan. Heurnius* in his method *ad praxin medicam*, *Cap. De Clyſtere*; and *Guill. Fabritius Hildanus Cent.* 1. *Obſerv.* 78. cauſed to be printed for to inject clyſters into the belly.

Fig. VIII. is a ſilver cap and full of holes, which is applied to the ulcerated nipples of the breaſts, that nurſes may ſuckle the infant without any trouble. This cap is alſo uſed for wounds of the Thorax; for after that any one of the aforeſaid pipes hath been thruſt into the Thorax, and a piece of ſponge is put into the orifice of the pipe near the ſhoulder; this cap is put upon it that the matter, almoſt every moment, may ſweat through the holes of it by degrees, and without any loſs of ſtrength.

Fig. IX and X. are candles made of ſtrong double thread and white wax (to which a little Turpentine is added, that they may not break ſo ſoon) and theſe are to be ready for uſe when the urine is ſtopped by a caruncle in the urinary paſſage, which muſt be cured. *The candle* Fig. IX. *is broken, leſt in the drawing forth of the candle, ſome piece of wax, which ſometimes hath no wick in the middle, ſhould be left in the paſſage, and thereby the difficulty of making water could be greater.* Wherefore the Chyrurgian ſhall cut off, with his pincers, that part which is broken at the end of the candle; and then he ſhall thruſt into the urinary paſſage the ſaid candle, ſo far as need ſhall require, firſt anointing it with oyl of ſweet almonds.

The

TABVLA XIV



The XIV. Table.

Of Syringotomi, *and the needle wherewith the ſcrotum is perforated after the cutttng of a Hernia (uſed at Nurſia) and the bottom of a more ſloping fiſtula; of the catheter, the directory, and two inſtruments wherewith bullets are taken forth of wounds made with gun shot.*

FIG. I. is a crooked knife, which upon the inſide (*a*) hath an edge, and on the outſide (*b*) it is blunt, namely a *Syringotomus*; which at one end (*c*) pricks and cuts; this we uſe in any fiſtula that hath but one paſſage, that the end of the fiſtula may be perforated; and afterwards the ſpace between one hole and another may be cut aſunder; at the point hereof we muſt faſten a button made of white wax, wherewith the pen-knife thruſt into the fiſtula may come to the bottom, without any hindrance, pain or hurt.

Fig. II and III. are pen-knives to cut fiſtulaes; both of which are blunt at one end, and have a bullet of iron well pollished at the other end. With theſe the whole paſſage of deep fiſtulaes are to be cut.

Fig. IV. is a knife to cut fiſtulaes, wherewith the wounds of the abdomen are dilated, that the inteſtines ſlipt down and ſwoln with winds may be commodiouſly thruſt back again. It hath a button at one end far greater then the two former knives have, leſt being thruſt into the wound it ſhould hurt the inteſtines.

Fig. V. is a needle, or iron inſtrument, with a double edge; which they of *Nurſia*, in my time in *Italy*, in this part of Chirurgery (which cures Hernias with cutting forth the teſticle) being excellent well skilled, and in that reſpect the moſt famous gelders, thruſt the wound of the groin to the bottom of the ſcrotum; which with the point of the inſtrument (to which alwaies men ought to faſten a ſmall button of white wax, for the reaſon aboveſaid) they perforate; whereby the corrupt matter, which by the wound of the groin deſcends to the ſcrotum, may be purged forth. This operation becauſe it is fearfull enough, and is not without the greateſt danger of life (*which the Authours of it knew well; and therefore they take on thoſe they would cure, but as dead men.*) I will open to ſuch that are ſtudious of Chyrurgery, another uſe of this inſtrument which is very ſafe. Namely, with this are cut the ſloping ends of ſinuous ulcers; for which cauſe fiſtulaes cannot be cleanſed,

unleſs the Patient be ſo ſituated that his head be downwards and his heels upwards, aud the corruption may run forth of its own motion. For it is known that ſuch hollow ſores which have not yet contracted a callous, whereof alſo we here ſpeak, can be cured only by glutinative medicaments, and convenient ligature. So the matter collected in the hollow ſinews may find a daily paſſage out. But ſince that ſcituation with the heels upward and head downward is troubleſom enough, with this inſtrument, to whoſe sharp end a ſmall button of wax muſt be faſtned, the bottom of the hollow ulcer is perforated (leaving the partition between the holes untouched) that the matter may run forth by the lower hole, and the partitions between the ſinuous ulcers may be glutinated.

Fig. VI. is a Catheter or a Probe; by which, being thruſt into the paſſage of the yard, and into the bladder, we prove the innermoſt turnings of the bladder, wherein the ſtone uſeth to lie hid, wherewith oftentimes man's nature is tormented. The Greeks call it κυφησις; and it is uſed to make the urine come forth when it is ſtopped. It is made of ſilver that it may be bent, and it is free from all roughneſs, leſt the part that is moſt exquiſite in feeling, ſhould be affected with the Catheter in the paſſage, and that it may enter into the bladder without pain: it is perforated with many holes at the end, that the pin being drawn back, the urine contained in the bladder may freely come forth by the pipe without any difficulty. *Note* that the pin is not thruſt into the pipe, that as it were by force of vacuum it might draw after it the urine ſuppreſſed, but that the urine should not preſently run forth, whileſt the cutter for the ſtone, or the Phyſitian ſeeks after the ſtone that lies hid. *Celſus* deſcribes the magnitude of the Catheter, *lib.* 7. *cap.* 26. ſee Table XXXIX. Fig. IX.

Fig VII. is a ſilver Probe which muſt be ſo bent, that its fiſſure which it hath in the middle, as far as the end of it, may be on the back ſide or gibbous part thereof: The Latines call it a *Directory*; becauſe, being thruſt into the yard, it doth moſt exactly ſhew the neck of the bladder; and upon that muſt inciſion be made to take the ſtone out of the bladder.

Fig. VIII. is a latten inſtrument, wherewith the ſtone is taken forth which remains in the urinary paſſage; namely a Probe, which on that part where it is made hollow like a ſpoon for the ears, is put into the conduit of the yard, ſo that it may paſs beyond the ſmall ſtone above it, and may lay hold on it with its lip and concavity:

cavity: this being done, oyl of ſweet almonds is poured through the hollow paſſage of the pin of the Probe, which hath a large orifice, into the Urinary paſſage, that it may become ſlippery; afterwards the Probe is gently drawn forth, and the conduit is preſſed behind the ſtone with the finger, untill it be driven forth of the Urinary paſſage.

Fig. IX. is an inſtrument the moſt fit to take forth bullets out of a wound. It is made of the beſt ſteel, and it conſiſts of three parts; namely, of two ſmall pipes and a piercer. The outward pipe (*a*) can shut in the innermoſt pipe; which at one end is divided into two ſpoons of iron (*b*) that it may faſten the bullet, that it may not turn about with the piercer, which muſt be faſtned into it. The Piercer (*c*) is moſt sharp and ſomewhat longer than its two pipes; which by the hole of the handle (*d*) may be ſeen to be thruſt into the pipe.

Fig. X. is a Piercer printed without its pipes.

Fig. XI. is the ſame inſtrument with the former, (but that it wants a Piercer) wherewith bullets are drawn forth; it conſiſts of two parts of the pipe (*a*) and the ſtile (*b*) which is ſolid; which at the other end is divided into two ſpoons which may take in the bullet betwixt them. This inſtrument doth the very ſame, that the inſtrument of *Alphonſus* in the following Table doth.

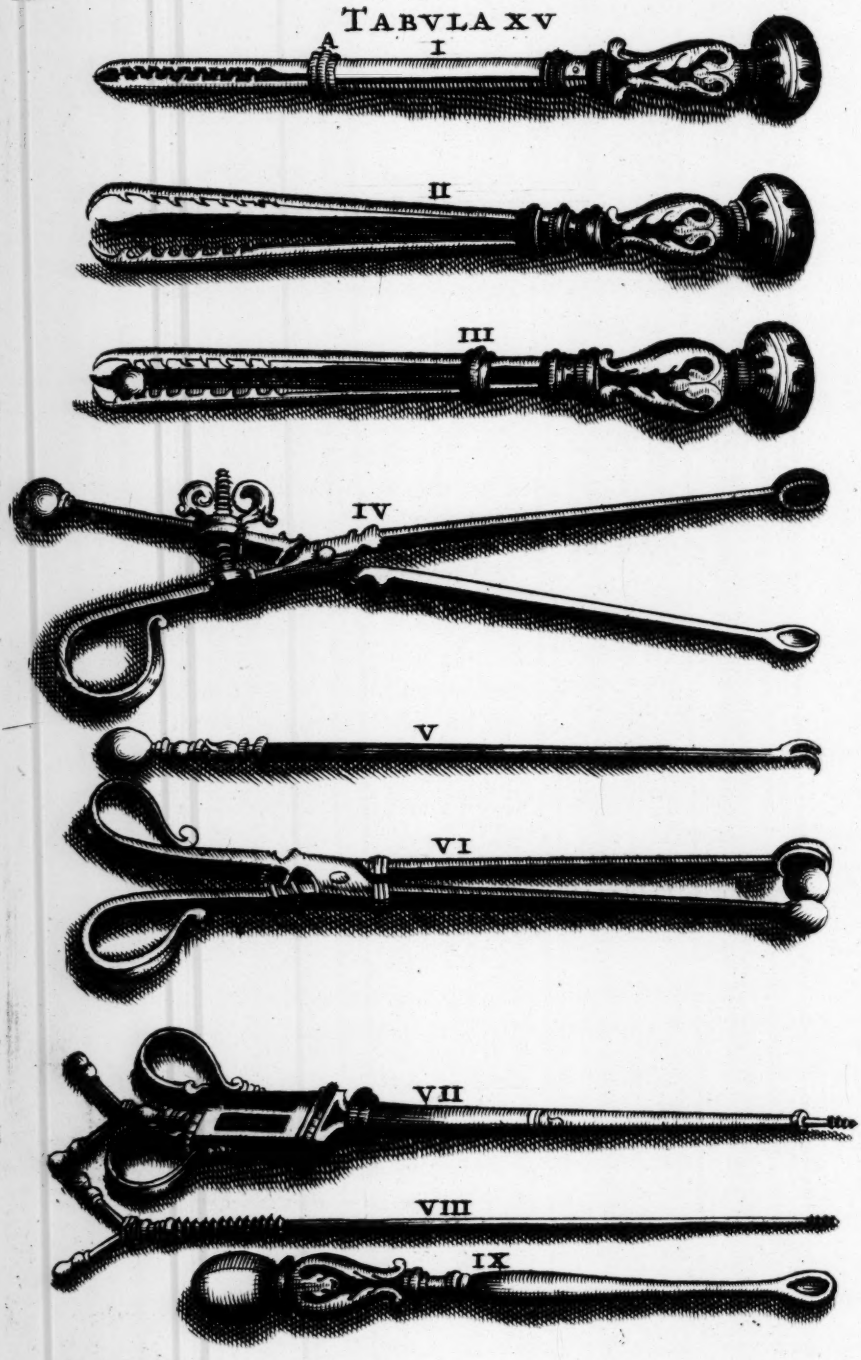
Fig. XII. is the pipe of the precedent inſtrument by it ſelf.

Fig. XIII. is the ſtile of the inſtrument which is ſolid half way; and at one end repreſenting the form of ſpoons with teeth; at the other end like ſcrews, that are boſſed with a hilt and a button.

Fig. XIV. is the hilt of the ſtile, with its little button, which is round and hollow.

Fig. IX, X, XI, XII, XIII, XIV. of this Table, muſt be made a third part greater than they are here printed.

TABVLA XV



The XV. Table.

Of other iron inſtruments fit to take out musket bullets; namely, Alphonſus's inſtrument; the Gooſe-bill pincers, with and without a ſcrew; the little hook; the piercer with a pipe; and the ſpatula which repreſents a Gooſe bill.

FIG. I, II and III. is an inſtrument called an *Alphonſine*, made fit to take out bullets out of wounds; which *Alphonſus Terrius*, a Phyſitian of Naples, *Lib.* 2. *de vulner ſclopet. cap.* 3. deſcribes in theſe words. Yet that inſtrument which men call the Cranes-bill, muſt not be forgotten, for that it is alſo an excellent inſtrument to draw forth any thing, and commended by all both old and new Chyrurgians; wherewith not only ſmall bullets are taken out of the moſt difficult places, but alſo pieces of Armour, and many other things. To this we (that it may be more commodiouſly and firmly held in the hand, and ſo bullets and other ſtrange things in wounds may be found out more certainly) have added rings for pincers, after this faſhion. The ring A of the firſt Figure, thruſt to the former part of it, ſhuts the inſtrument; the ring B of the ſecond Figure being drawn back to the handle, the inſtrument is opened. The third Figure is the inſtrument which now holds the bullet.

The Figures of the following inſtruments, are taken forth of the Treatiſe of *Barthol. Maggius*, concerning the cure of wounds made by bullets from great and ſmall guns.

Fig. IV. is a pair of pincers with a Gooſe-bill, which hath a ſcrew about the handle, that it may lay faſt hold of the bullet.

Fig. V. is a little iron hook which ſerveth to bring forth bullets.

Fig, VI. is a pair of pincers with a Gooſe-bill, which if it had a ſcrew were like to the former.

Fig. VII. is a moſt ſharp piercer, in its pipe, with which gun-ſhot are taken forth.

Fig. VIII. is the piercer without the pipe.

Fig. IX. is a ſpatula with a Gooſe-bill; provided to receive and take forth ſmall bullets.

The Alphonſine inſtrument and Gooſe-bill pincers, muſt be made a third part greater; but the pipe with the piercer muſt be as

great again. *Ambroſ. Paræus* in his Chyrurgery hath deſcribed more inſtruments to the life, where he treats of wounds by gunshot; but they are not better for theſe purpoſes: and ſo hath *Guill. Fabritius Hildanus*, *Cent. I. Obſervat. LXXXIX.* Wherefore there are divers ſorts of inſtruments that are good to take out bullets from the wounded parts, according to the variety of the wound, and the faſhion of the body that muſt be taken out: whereof ſome lay hold and draw out, either as they are sharp and ſo only ſtuck into the bullets (Fig. VIII.) or as they are dented at the end; and ſome are ſtreight (Table IV. Figure I. Table IX. Figure VI. and in this Table Figure I.) and others are crooked (Table IX. Figure X.) to be uſed as the bullet went in ſtreight or crookedly; ſome take and receive the bullet in, as they are broader and hollow at the end; (Figure IV, V, VI and IX.) others lay hold and take it in together (Table XIV. Fig. IX.) But if the bullet found by the Probe muſt be drawn forth by a pair of Pincers, principal care muſt be had that the lips of the wound, and the inward parts of it (namely the Arteries, Veins, Nerves and Tendans) be not hurt nor laied hold of: for if this be done moſt cruel pains, and great inflammations, with great danger of life, are produced; beſides a moſt fearfull flux of blood following. Wherefore to prevent ſuch ſymptoms, let the Pincers never be opened, unleſs you feel the bullet at the end of it; for then muſt the Pincers be opened, and the bullet laid hold on by them, and pulled forth.

The XVI Table.

Of the Pipe that is all ſolid; and of Pipes that have holes on the ſides; and of their ſtile, wherewith being put into the Anus, *the Hæmerods and Ulcers of the right gut are burnt and dried up; of the glaſs alſo by which the niples, hid in the breaſts, are drawn out.*

Fig. I. is an inſtrument fit to dry up the Hemrods within, that either ſwell or ſuperficially exulcerate the inteſtine; namely, a ſmall iron pipe, which is put up into the fundament; it hath ſhoulders, and is ſhut at bottom, leſt the red hot iron (Fig. IV.) which is frequently put in and drawn out of the hollow of the pipe, ſhould go in higher then it ought to do.

Fig. II.

TABVLA XVI

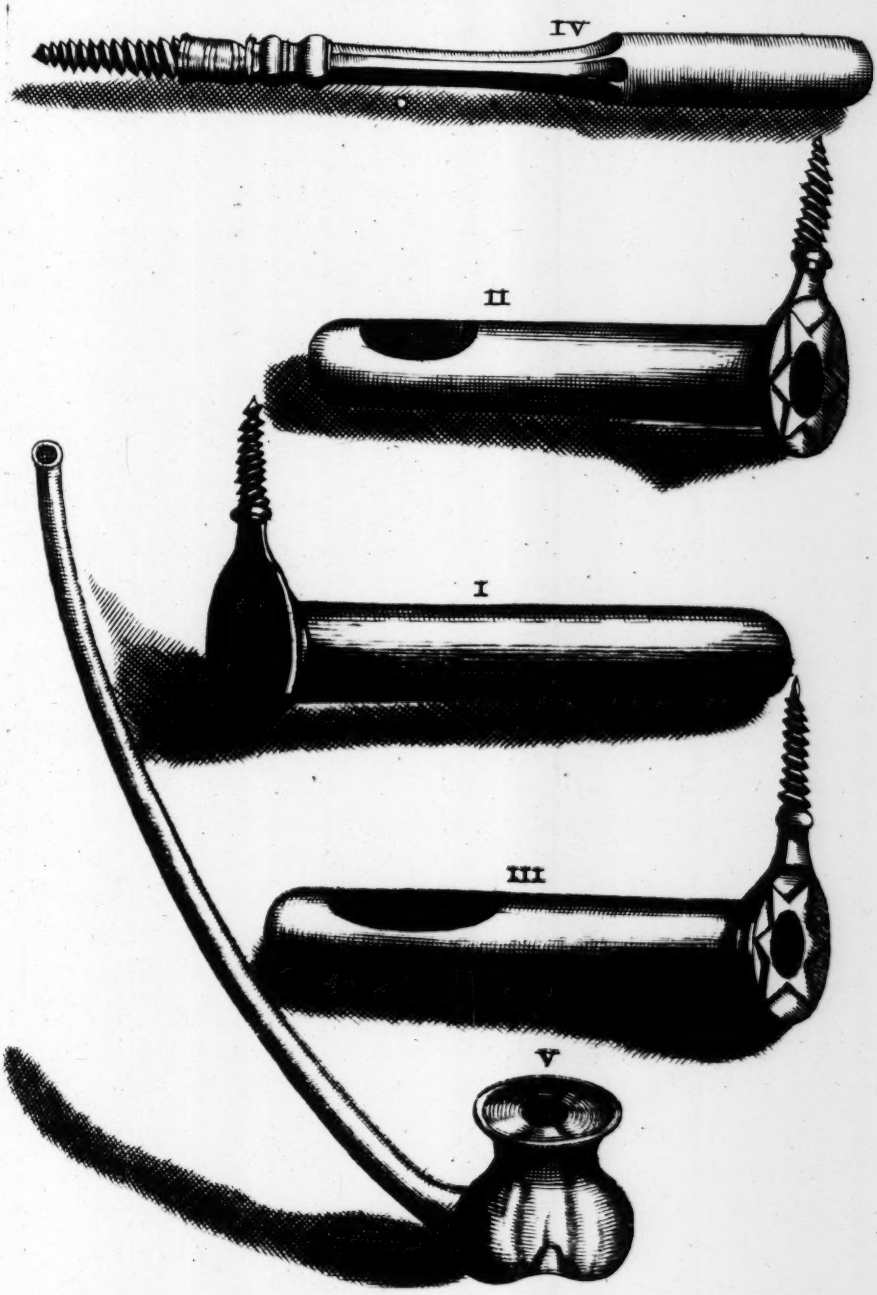


Fig. II and III. are pipes alſo to thruſt into the fundament, but they are perforated on the ſide (according to the ſcituation of a callous and deep ulcer, which will not yeeld to topical medicaments; into theſe is thruſt a red hot iron Fig. IV.) with theſe pipes the ſound parts are defended from the immediate touch of the fire, that only the ulcer moſt ſafely may be touched twice or thrice with a red hot iron.

Fig. IV. is the ſtile which is made red hot, and is thruſt into the perforated pipes; and into the ſolid pipe alſo to dry up the internal Emrods, and thoſe that are ſwoln; and to cure the ulcers of the right gut, be they ſuperficial or deep.

Fig. V. is a hollow, long, narrow glaſs, having a mouth at one end, which is as great as to receive the niple; but at the other end it hath a ſmall hole with a long pipe; wherewith the Patient her ſelf, by ſucking, draws forth her nipple that lies ſecret, ſo that the infant may lay hold of it with its mouth, and draw out the mothers milk.

The XVII. Table.

Of a crook to draw forth the dead Child; of the ſpecula ani; ſpeculum matricis; *circles for the womb, and the deceitfull pincers.*

Fig. I. is an inſtrument with two crooks, wherewith the dead child is drawn forth of the womb, either whole, or cut in pieces.

Fig. II. is an inſtrument which men call *ſpeculum ani*, and of the sheath of the matrix; becauſe by means hereof the ulcers of the right inteſtine are ſeen, and of the sheath of the matrix: To know the quantity and quality of them, that part of the *ſpeculum* marked with A, which is open and called the male, is uſed for men; but the part that is shut and marked with B, is uſed for women, and is therefore called the female.

Fig. III. shews the ſame *ſpeculum*, and that part which is uſed for men is shut, and the other part for women is open.

Fig. IV. is a great *ſpeculum matricis*, which is only uſed for women, when the dead child is to be cut out, or ſome ulcer of the matrix muſt be viewed. Theſe inſtruments for ſight muſt be made a third part greater then they are printed here.

Fig. V.

TABVLA XVII

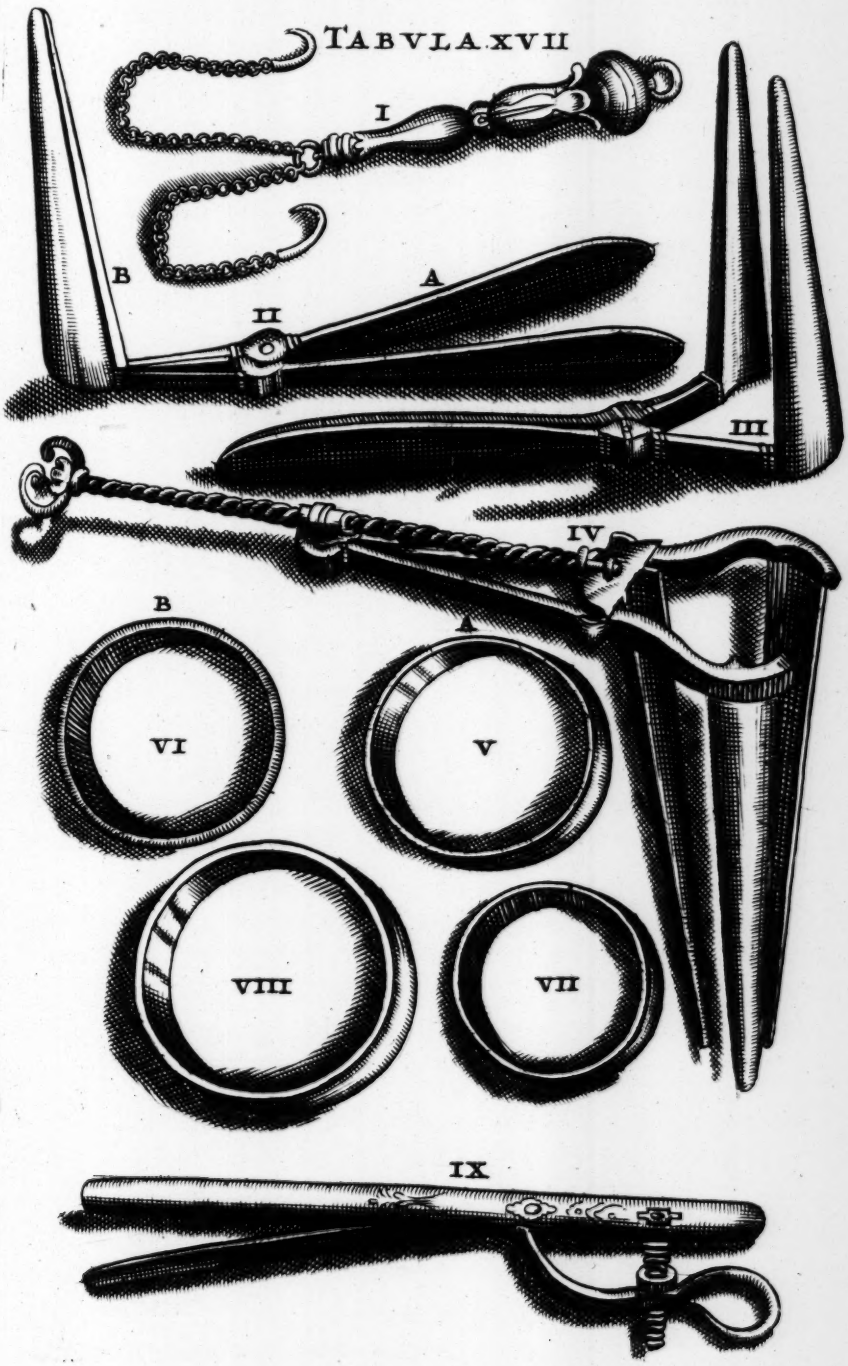


Fig. V, VI, VII and VIII. are circles for the matrix, which are made of box; which after the womb fallen down is put back again, are thruſt into the sheath, that the womb may not fall down any more. On the part A that they look inward with, they are ſomething copped; but on the other part B they are blunt. The Chyrurgian or Phyſitian muſt have alwaies ready at leaſt four rings for the matrix, which muſt differ only in magnitude, that he may uſe them as the neck of the matrix is greater or ſmaller.

Fig. IX. is the deceitfull Pincer; which if it deceive not the Patient, yet it will deceive the Chyrurgian, as it was the opinion of the Ancients, in dilating of hollow places.

The XVIII Table.

Of inſtruments whereby the foot contracted, is by degrees ſtretched out again; and the elbow grown ſtiff, is bent by little and little; the artery of the wriſt wounded, is preſſed together; and a ſeton is cut in the neck.

Fig. I. is an inſtrument made of iron, which muſt be applied to the knee that is crooked and drawn together, which conſiſts of divers parts; namely of the iron Capſula A, which the ſcrew B paſſes by, and it is faſtned to a ring made of a plate of iron, ſo broad that it may cover the whole knee C; with the latchets D, that it may be shut and opened; with holes in the outſide E, that it may be drawn back with the cotton and lint; and laſt of all with an iron key F, by the means whereof the iron ring may be drawn too, and the leg comes into a right poſture.

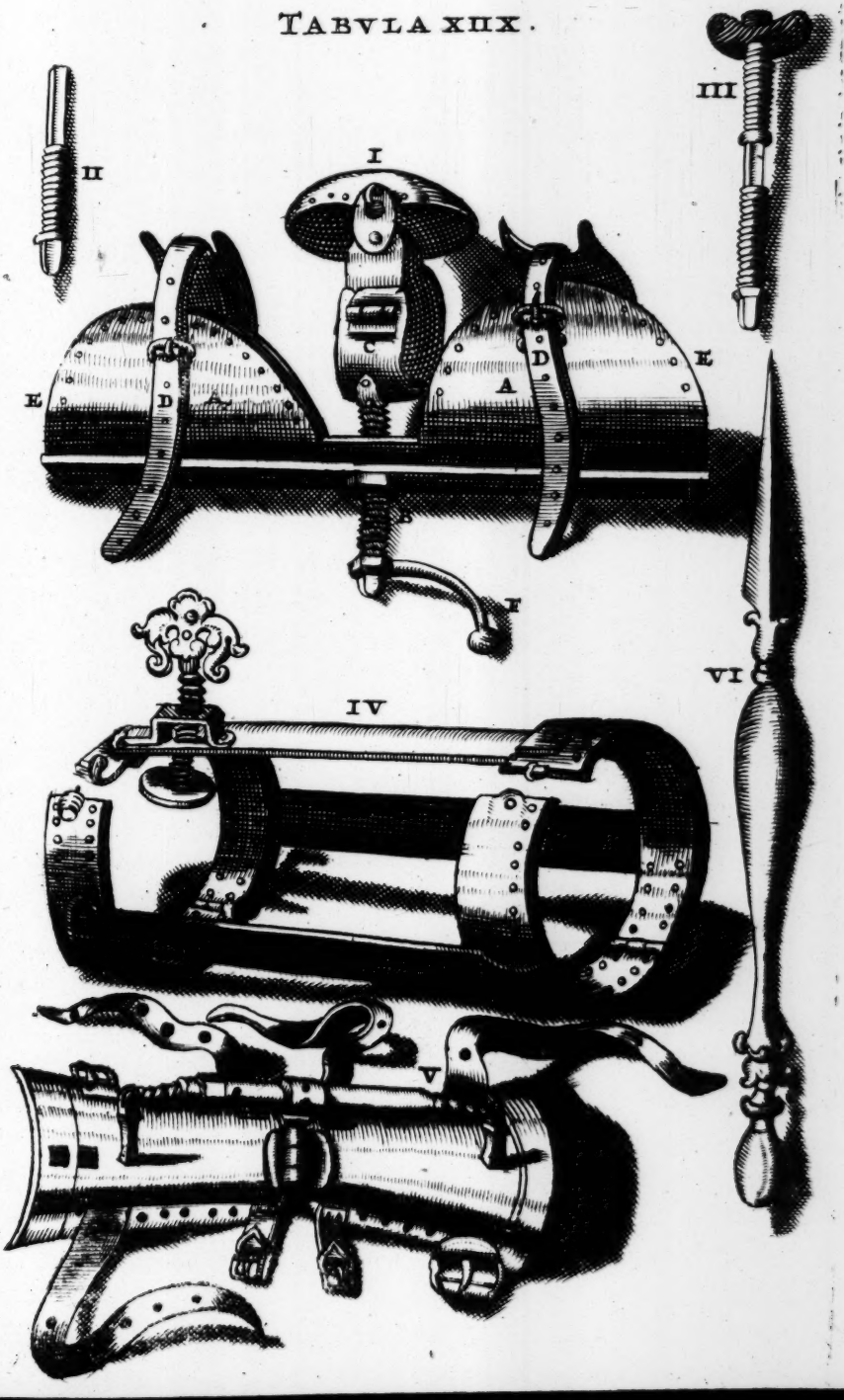
Fig. II. is the inferiour and half part of the ſcrew B, ſet forth Figure I.

Fig. III. is the ſcrew B of Fig. I. out of its place, conſiſting of two parts; of which the upper part (*a*) after attraction is left fall in the ring; the other part (*b*) is drawn forth.

This inſtrument differs not a little from that which Guillielm. Fabritius Hildanus, *in his little book* de combuſtionibus, *writes that he invented.*

Fig. IV. is an inſtrument made of divers plates of iron, and perforated with very many holes, that it may be applied with cotton and lint, and fitted to the arm like a ſleeve, and may be shut and opened.

TABVLA XIIX.



opened. The artery of the wriſt is preſſed together with a ſcrew having a broad head, which this inſtrument is made with, be it open of purpoſe or by accident, that the Patient may not pour forth his life with his blood.

Fig. V. is an iron inſtrument which we uſe when the arm cannot be bent. This inſtrument is bended by degrees, by means of a ſcrew. The inſtruments of this Table, Fig. I. IV and V. muſt be prepared after the proportion of the part affected.

Fig. IV. is a pen knife with two edges, and reſembling the form of a mirtle leaf, wherewith a ſeton is cut in the neck; the pincers of this knife is pictured and deſcribed before Table VII. Fig. X.

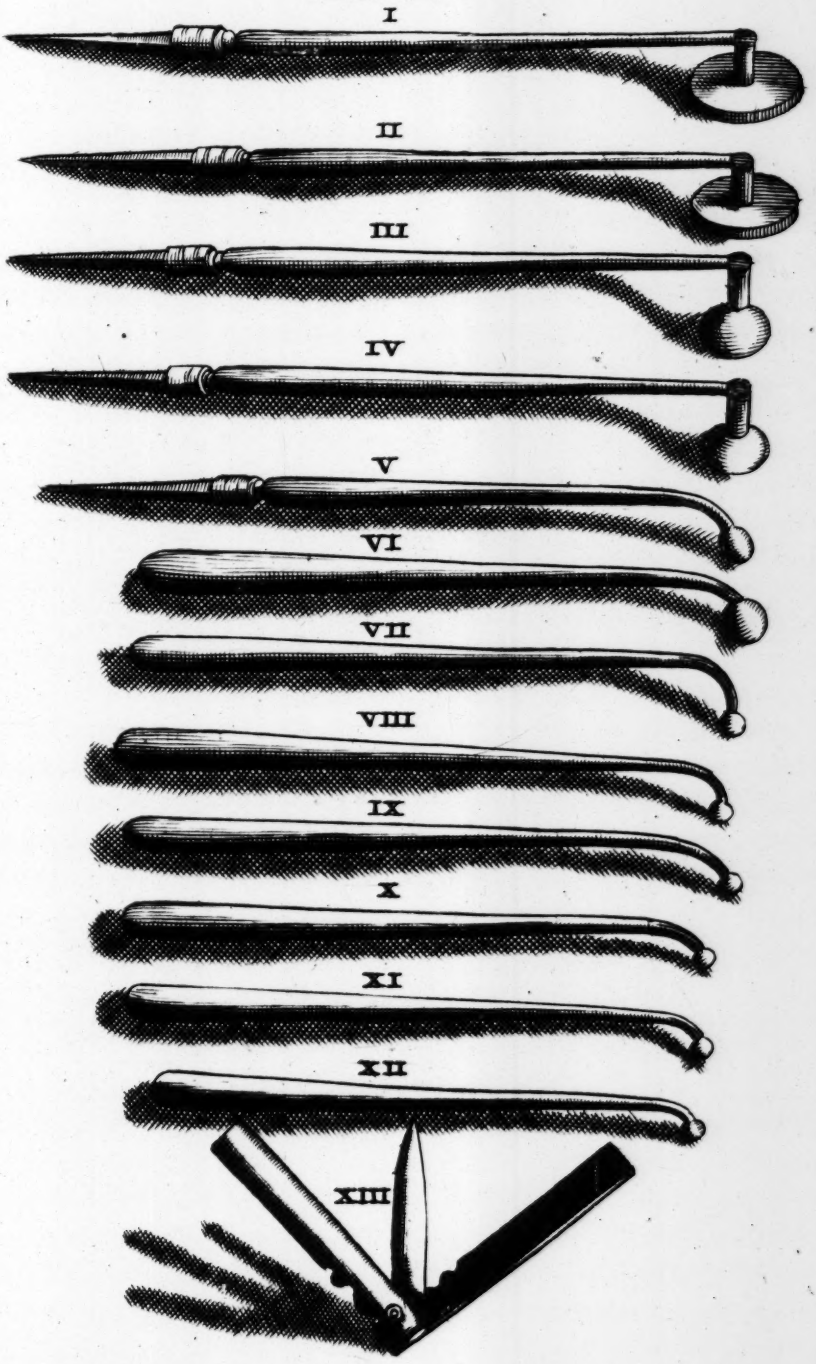
The XIX Table.

Of divers ſorts of iron inſtruments; with which, being made red hot, divers parts of the body are cauteriſed for divers cauſes; and of a ſmall Lancet to cut the veſſels, and to open impoſtumations in the skin, and to perforate into the paſſages of the fundament, yard, and preputium that are shut.

Fig. I and II. are iron inſtruments that are blunt and broad at the upper end; with which, being red hot, not only ſtrange fluxes of blood are ſtopped, after the amputation of a breaſt, or a ſphacelated part; but alſo the part remaining is corroborated, that it may receive no new flux of humours to it. *Anno* 1635. in the time of the Plague, a certain Senatour of Ulma, who is yet alive, was tormented about the fundament with a peſtilent carbuncle, which was great and black, which ſinking into the inward parts quite vaniſhed away, and it threatned certain death: To draw back this carbuncle, I applied the inſtruments Fig. I and II. very well fired by courſe, near the fundament, that it might not be exaſperated by the touch of them; but might only feel the force of the fire, that the Patient might well indure it, whereby the carbuncle might be drawn forth again; when I had drawn it forth, I made an eſcar there, with the iron inſtrument Fig. III. following; to make the eſcar fall, I applied a cataplaſm that in two daies time made a ſeparation of it:

Take

TAB XIX



Take common ſalt half a dram.
Pepper 1 dram.
Fat Figs 3 in number.
Green Rue leaves a handfull.
Leven old and four 1 ounce.

Mingle all theſe in a mortar moſt diligently, to the form of a Pultis, which muſt be renewed twice a day.

Sennertus deſcribed this cataplaſm; and the Anceſtours of *Spigelius*, in the low Countries, held it for a ſecret, becauſe it excellently well takes away all Eſcars. When the Eſcar was gone, I laid upon the ulcer the *unguent citrinum*, which hath a force to digeſt, attract, to ingender flesh, and to reſiſt poiſon; about the ulcer I applied the plaiſter called *album coctum*; at laſt I cicatriſed it with the plaiſter *Diapalma*.

Fig. III and IV. are round actual cauteries, wherewith the corrupted bone is touched, that it may ſeparate from the ſound bone.

Fig. VI and VII. are oval like at the end; wherewith the Hemrods that run too much, are touched ſeverally.

Fig. VIII, IX, X and XI. are actual cauteries round at the end, which are thruſt into hollow teeth to hinder the rottenneſs of them. The figure marked with a ſtar is a ſtreight Lancet, cutting with both edges. With this the French and Italians very happily open veins to let blood: With this the fundament of children new born, and the yard not perforated is opened: With this, in Germany, fontanels of the limbs are made.

The XX. Table.

Of the greateſt ſort of pincers; the cizers that cut Cartilages; the crooked knife; and the wooden mallet which we ſtand in need of beſides the pincers, to cut off a part that is ſphacelated.

Fig. I. is a pair of pincers, wherewith not only bones are cut off that riſe up in fractures with wounds, and cannot be ſet together again; but alſo thoſe which by their ſharpneſs prick the brain; with this pair of pincers alſo, the fingers of the hand are cut off, and toes of the feet that are ſuperfluous, and cancerated

or

TABVLA XX

or ſphacelated; which muſt be made as big again as you ſee it here printed See underneath Table XXVI. Fig. I and VI.

Fig. II. is a pair of cizers to cut, made for griſly aud brawny parts.

Fig. III. is a crooked knife wherewith the flesh is cut in ſo far as the bone which muſt be ſaw'd off, and is neceſſary before the amputation of the Leg or Arm.

Fig. IV. is a chizel wherewith not only the tops of the fingers are cut off; but alſo of the arm and of the radius.

Fig. V. is a hammer made of the hardeſt wood.

Fig. VI. is a block of wood, which is round and high; upon which the parts to be broken off muſt be placed.

The XXI Table.

Of the inſtrument which is called by Hippocrates *ἄυξλω; of the ladder; of that which* Nileus *calls* Plintheum; *and of the pipe, and* Galen's Gloſſocomum.

Fig. I. ſhews the faſhion of that inſtrument which *Hippocrates* calls *ἄμξλω*, with thoſe things that are added to it.

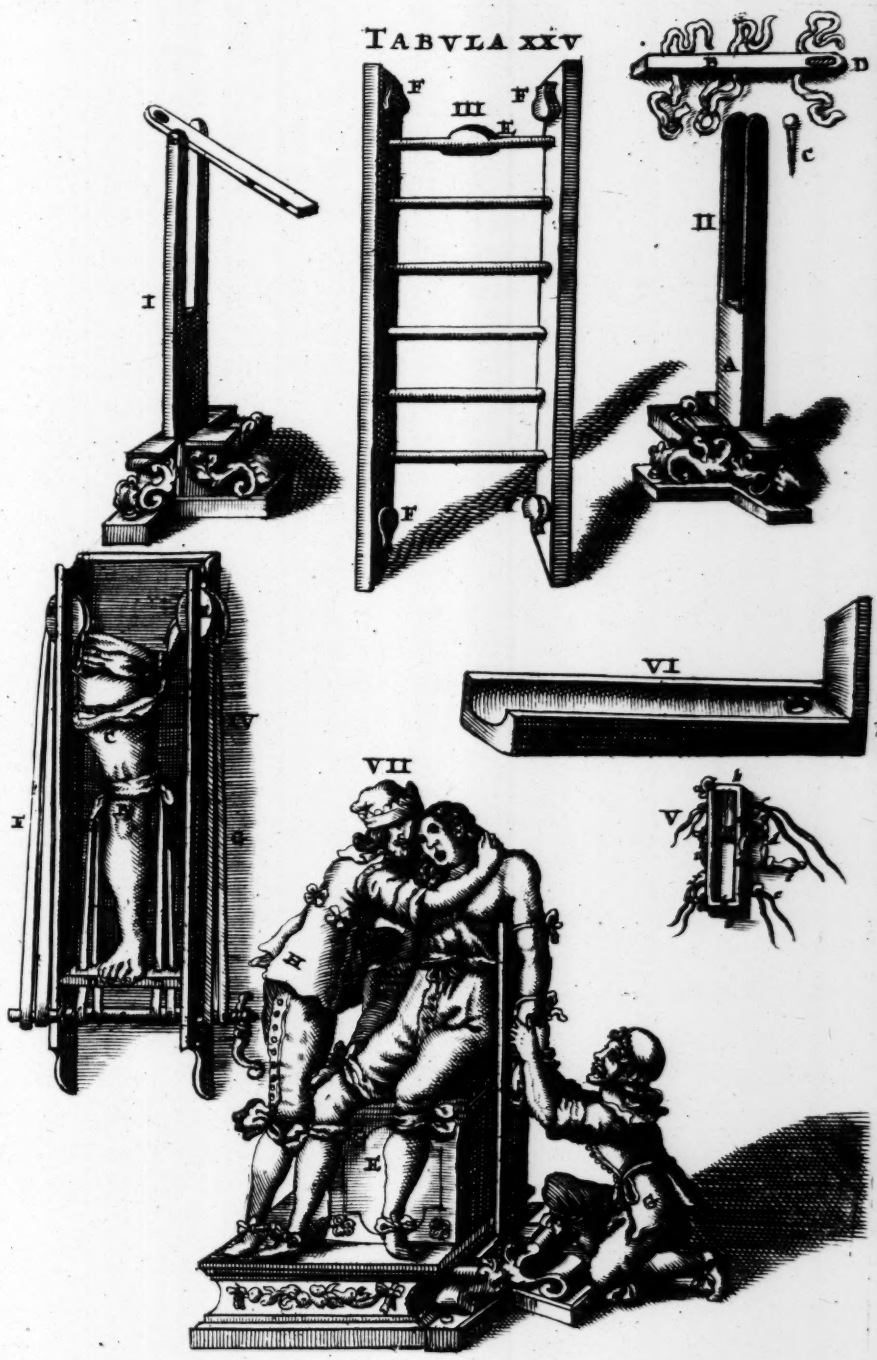
Fig. II. is the inſtrument called *Ambi*, divided into its parts, (namely the pillar A; the wooden ſpatha or *Ambi*, properly ſo called, B; and the pin C; which holds the turning *Ambi* B, in its pillar A) *Ambi* is thus deſcribed by *Hippocrates*, *Sectione 6 De Articulis*.

Let the peece of wood B be almoſt five or four fingers broad, and two fingers thick, or elſe not ſo thick; but in length two cubits, or ſomewhat leſs; whoſe one end D muſt be round and very narrow in that part, and exceeding thin; but it muſt be very high, and in the uppermoſt part of the roundneſs it muſt a little ſtick out, wherewith it reaches not the ſide but the top of the arm, that the arm-pit ſet under it, it may be fitted to the ſide: I add that this piece of wood muſt have three holes, through which thongs of leather may be put, wherewith the arm muſt be faſt bound to the wood.

Fig. III. is a ladder, whoſe uppermoſt round hath a round body upon it E, which is put under the arm-pit, between the ſide and top of the ſhoulder; after this the Chyrurgian draws downward

the

TABVLA XXV



the arm out of joint, but not bound to the *ſpatha*; another of the ſervants laying hold of his neck and top of his ſhoulder, ſhall draw likewiſe on the other ſide; a third ſhall lay hold of his whole body and draw downwards alſo, on the other ſide of the ladder. See the faſhion of this operation in *Galen. comm. in Lib. Hippoc. de Articulis*. Alſo this Ladder hath four pullies, for the uſe of *Nileus* his *Plintheum*, which ſhall be explained underneath Fig. V.

Fig. IV. is the form of an inſtrument called *Gloſſocomon*, for the fractures of the thigh and the leg, to hold them faſt together when the Patient is removed from his bed, whereon he lieth, into another bed till that be made; and it is exceeding fit for it. The deſcription of this *Gloſſocomon* found in *Galen, comm. lib. Hippocr. de Fracturis*, is thus: This inſtrument called *Gloſſocomon* was invented by the latter Phyſitians to hold faſt, when the thigh or leg is broken; the making of which, and the uſe of it, I ſhall annex hereunto. And indeed this ſeems not to me to be invented to no purpoſe; and if either thigh or leg be broken, it is moſt conveniently applied, where the callous may compaſs it about. It hath at the lower part the Axis A, to which muſt be tied the ends of the ſtrings that extend divers waies; let the ſtrings be faſtned upon the utmoſt parts of the bone that is cured; and make them ſo of two bands B and C, that both of them may have four ends, two on the right ſide F, and as many on the left ſide G. From thoſe ends, thoſe things which are belonging to the lower ſtring B, muſt be drawn to the axletree, by the holes made in the lower part of the *Gloſſocomon* D; and thoſe things thar belong to the uppermoſt ſtring, muſt firſt proceed to the upper parts; then they alſo muſt be put through the perforated ſides of the *Gloſſocomon*, whereby they are faſtned in the holes of the ſcrew F; but on both ſides, on the outſide of the *Gloſſocomon* F and G, the ends of the upper ſtring C muſt be carried to the axis. For theſe things being ſo ordered, one turning about of the axis, will equally extend both ſtrings, that downward which is bound to the lower part of the broken bone; but the other upward ſo, that where the leg lieth you may afterwards daily correct this ſtretching of the ſtrings divers waies, by extending more or leſs forcibly. Therefore the axis extends the ſtring B, which is in the lower part, drawing directly; but that in C, which is in the upper part, it extends by the interceding of another motion; the Greeks ſay it is done ἀλλ᾽ ἐπὶ μεταδιπλικῆς πτέρσεως. The Figure ſhews the extenſion of the thigh that is diminiſhed; but if the leg be diminiſhed, the upper ſtring C muſt be faſtned below the knee, and the lower above the ankle;

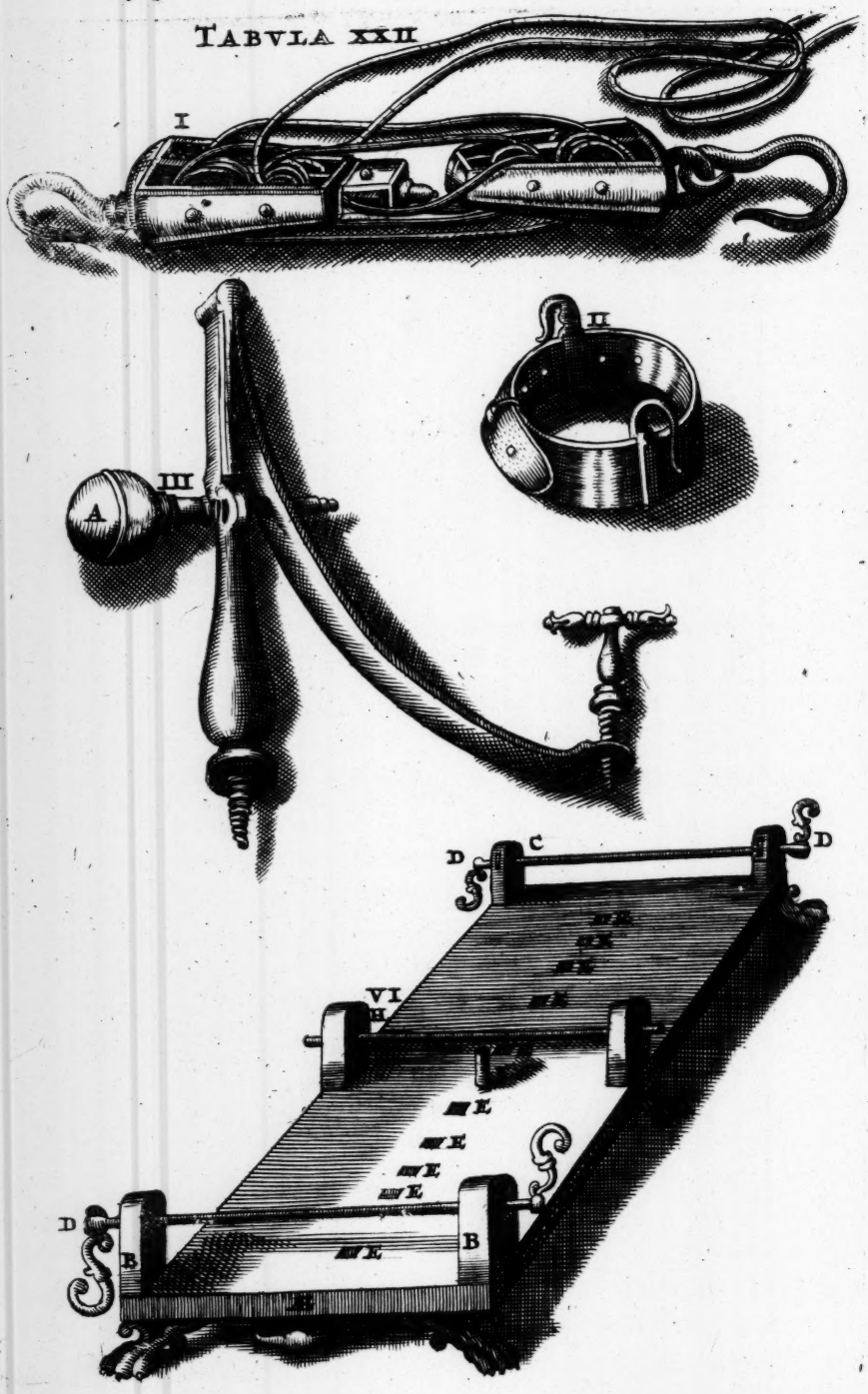
ankles; and ſo the leg is to be kept extended divers waies.

Fig. V. is a drawing inſtrument called *Plintheum Nilei*; and it is made after the pattern of thoſe which are called long and ſquare wind-laſts. This inſtrument hath two ſides (*a*) four hands breadth long, and a finger thick overthwart, which at both ends are compacted together with two croſs boardi (*b*) which have in the middle the hole (*c*) through which the cords (*h*) are put. The thickneſs and breadth of the Tranſorus, is equal to the ſides; but the length of them is a full hand breadth: wherefore rightly is ſuch a joining together made, that the ſides (*a*) may be four hands breadth long; and the Tranſorus (*b*) but one. The whole inſtrument is made long waies; yet if a man will, he may make the ſides ſhorter then I have ſaid, ſince the inſtrument performs its operation by one axletree: Therefore the ſides, in the middle, are perforated with round holes, through which the axletree (*d*) paſſes, whoſe left end, where it paſſes without the ſide, hath a wooden handle (*e*.) Alſo in this inſtrument there are four iron rings (*f*) faſtned to the ſides, with as many leather ſtrings hanging down, two at the lower part, and two at the upper part, that it may be faſtned to the ladder Fig. III. To both ends of the axletree there are wheels added (*g*) and to their ſtops (*i*) that they may hold firm the axletree turned about by the handle. So that if the arm, out of joint, cannot be reduced either by a band put under the arm-pit, (Tab. XXIII Fig. II.) nor yet by a linnen cloath wrapt on a heap (Table XXIV. Fig. I.) this inſtrument muſt be tied to the ladder; and the arm muſt be extended after the ſame faſhion and manner, as it is found to be done in *Oribaſius lib. de Machinament. cap* 14.

Fig. VI. is a long, hollow trunk, wherein the leg or thigh, being broken or out of joint is laid; it muſt be filled with Tow hards, for the whole part muſt be laid in the hollow trunk, rather than half, *Hippoc. de offic. medic.* This Capſula hath the hole G at the bottom to receive the heel, and at the end a long board for the ſole of the foot to reſt againſt.

Fig. VII. repreſents the beſt reducing of the ſhoulder fallen beneath the arm pit; that is, which *Fabritius ab Aquapend.* deſcribes thus. The end of the *ſpatha* muſt be ſet under the arm-pit of the ſhoulder out of joint, between the ſide and the top of the ſhoulder; the reſt of the plank muſt be bound placed all at length, with the arm on the inſide; firſt, immediately under the top of the ſhoulder disjointed; next above the elbow, and laſt upon the wriſt. This being done the Patient muſt be ſet upon a ſeat E, and his arm bound to the plank muſt be fitted to the beam or pillar (Fig. II. A) by means

TABVLA XXII



of a pin (Fig. II. C) ſo that the pillar be between the ribs, and the plank bound to the arm (Fig. VII. F.) The Patient and pillar being thus ſcituated, the Chyrurgian G, on the one ſide, ſhall pull the arm downward; and on the other ſide his ſervant H, taking hold of the neck and ſhoulder of the Patient, ſhall likewiſe pull him downward. For whileſt the Chyrurgian pulls the arm downward, the plank, together with the arm, is drawn to the ſides; but when the lower end of the plank is brought to the ſides, the upper part which is round makes a contrary motion, and ſo moves the head disjointed to the fore-part; which motion being made, the muſcles after that draw eaſily; or elſe the Chyrurgian, by force, doth thus reduce the head of the ſhoulder bone. This manner of uſing the plank, differs from that which *Paræus* deſcribes, *lib.* 11. *cap.* 27. How the ſhoulder may be reduced by the ladder and the *ſpatha* together, *Paræus* ſhews the figure *lib. cit. cap.* 26. The other waies of reducing the ſhoulder out of joint; namely, by the Theſſalian ſeat; the double door; the croſs beam, and the Peſtle, are found deſcribed in *Galen*; in *comm. Hippoc de articulis.*

The XXII. Table.

Of Vitruvius *his drawing Engine*; *the ſmall girdle and Remora of* Hildanus *and* Hippocrates *his form.*

Fig. I. is a drawing Engine with a ſmall cord; by which we uſe to extend joints diſlocated, and fractures; it is taken out of *Vitruvius lib.* 10. *cap.* 4.

Fig. II. is a little girdle (wherewith the arm is compaſſed in above the wriſt; the thigh above the knee; and the leg above the ankles) with two ſmall hooks.

Fig. III. is an inſtrument called a Remora, which in diſlocations of the ſhoulder toward the lower parts, is put under the armpit, that the knot of the ſhoulder may be anſwerable to the head, and the pin B may faſten the Remora; although this inſtrument which *Guill. Fabritius Hildanus* ſets forth and deſcribes *Cent.* 5. *Obſ.* 86. with the way to uſe it, be highly commended by the latter Chyrurgians; yet the laxations of the ſhoulder are far more happily reduced by *Hippocrates* his *ſpatha*, if they cannot be ſet with the hand, than by the Remora or any other inſtrument.

TABVLA. XXIII.

Fig. IV. is *Hippocrates* Form, which is moſt convenient to reſtore and ſet again limbs broken or out of joint. The Board A is prepared ſix cubits long, and two in breadth; it hath nine fingers overthwart in the thickneſs Æ, where it is to be turned upward. This board hath four other boards, which are round in the upper parts; namely two, and again two at both ends B: *Hippocrates* calls ſuch timber boards φλίας; in the breadth they are perforated, and in the holes the axle-trees C paſs through, which at the ends have handles D to turn them about; the whole plank, from the middle to the end, hath hollow places E, that are 4. fingers in breadth diſtance one from the other; whoſe breadth and depth is equally three fingers broad overthwart, in which a round piece of wood is ſet F. *Hippocrates* calls theſe holes that go not quite through καπίτας. This Form, beſides the four φλία G at the end hath two other Poſts in the middle, which contain the croſs piece of timber H, in the upper hole to reduce the thigh ſlipt forward in the hinder and external part; whereof ſee *Oribaſius lib. de Machin. cap.* 37 & 38. The Form ſtands on ſix feet, that it may be lifted up with mens hands, and removed from place to place. To the little wheels of the Form, Remoras may be fitted which may keep the axle-trees ends unmoveable. I ſhal declare the uſe of this Form of *Hippocrates*, underneath Tab XXV. leſt young Practitioners may have the ſame miſchance that I knew, in my time, at *Padua* befel a Chyrurgian and a Phyſitian, who was otherwiſe moſt famous for his skil. This man when he had need of this Form to extend a fracture of the leg; but having borrowed it knew not how to uſe it, to his great diſgrace, was with ſhame conſtrain'd to learn the uſe of the Form, from one of whom he had borrowed it, almoſt againſt his wil

The XXIII Table.

Of the ſetting of a ſhoulder broken; and the reducing of the ſhoulder, arm and thigh bones, put out of joint.

Fig. I. teaches how to extend and to ſet the ſhoulder bone that is broken; which *Hippocrates Sect. 6. de fractur. text* 9 deſcribes excellently. Wherefore the moſt exact diſtance of the arm is this. A piece of Timber of a cubit long A, or ſomewhat shorter, as are the handles of ſpades, muſt be bound on both ſides with the cord B, and hanged up; but the man placed upon ſome high ſtool, muſt ſo lean upon it with his hand. that the handle may be ſo placed under

under his arm-pit, that he can hardly ſit down, but may remain almoſt hanged up. Then ſome one firm bolſter or many C, being laid under and above it, at that height which may anſwer to the arm placed at a right angle; it were better to hang by a broad and ſoft thong of leather, or a broad band tied about it D, ſome heavy weight E that may gently ſtretch it, or elſe ſome other ſtrong man may forcibly draw the arm downwards at the bending of the arm Fig. II. but the Phyſitian ſtanding and placing one foot on a higher place, muſt attempt the cure, and with the palms of his hands ſet the bone; which truly will be eaſily done, for this way of extending is commendable if a man uſe it rightly. Others commend the way that *Celſus* uſed to extend the ſhoulders, which he deſcribes very darkly, *Lib.* 8. *cap.* 10. but *Fœſius* hath clearly opened the meaning of his words intirely, in his *comm.* upon the former words of *Hippocrates*; to which I think fit alſo to ſubſcribe.

Fig. II. is the reducing of the arm out of joint, according to *Hippocrates* his mind, where the elbow is ſlipt forth to the inward or outward part; the diſtention muſt be ſo ordered that the arm may be placed at a right angle with the ſhoulder. But it behooves us to lift up the arm-pit with the band F put under it; and to lay the arm upon ſomething, and about the joint to hang ſome weighty matter Fig. I. or elſe to preſs it downwards with the aſſiſtants hands, as in this Figure. *But whileſt the joint is hanged up, it is neceſſary to thruſt hard with the fore-part of the palms of the hands. This Figure is convenient, whileſt the arm is bound, hanged up and placed.* When it ſlips forth on the hinder ſide, it muſt be ſuddenly extended, and with the fore-part of the palms of the hands forced into its place again, which alſo muſt be obſerved in reducing other bones. When it ſlips forth into the fore part, laying a linnen cloath upon it, wrapt up in form of a ball, it is neceſſary at once to bend and reduce it, Table XXIV. Fig. I. But if it ſlip into the other, or hinder part, when it is reduced, both of theſe alſo muſt be done: See Table XXIV. Fig. I.

Fig. III. ſhews *Hippocrates* his way of reducing the ſhoulder ſlipt under the arm-pit. For though that be the moſt excellent way of reducing, which was commended a little before, Table XXI. Fig. VI. yet this which follows comes next to it, which our old man ſeems to commend in theſe words. Wherefore they whoſe ſhoulders ſlips often forth, may for the moſt part reduce it themſelves. For thruſting under the arm-pits the knuckles of the fingers of the other hand, they thruſt the joint upward, and they draw the bunched part of the arm to their breaſt. Alſo after this manner the

Phyſitian

Phyſitian ſhall force it into its place; if the inward part of the joint be ſlipt forth, putting his finger under the arm pit, he ſhall ſet his head to the top of the ſhoulder and bring it back from the ſides; but ſetting his knees to the binding of the elbow with his arm, he ſhall thruſt it to the ſides. But it is neceſſary that he who reduces it ſhould have ſtrong hands, or elſe he muſt do it with his hands and his head; and ſome other that aſſiſts him, muſt bring the bunched part that ſticks forth unto his breaſt.

Fig. IV. is the reducing of the thigh out of joint, which *Hippocrates* deſcribes as it here follows. But the hip is thus reduced, whether it ſlip forward or inward. A ladder is ſet in the ground, whereupon the man ſits with his ſound leg lightly extended, and bound about it with the beſt convenience; but to his leg out of joint G, there is hanged a basket H full of ſtones, or ſome earthen veſſel full of water: See the Figure of it in *Galen, comm.* 4. *in Hippocr. de artic. text. lib.* 4.

The XXIV Table.

Of the cure of the diſlocation of the elbow, of the hand, and of the neck bone.

Fig. I. repreſents another way of reducing the elbow out of joint, according to *Hippocrates* his opinion. But it is expedient to put a ſwathe band wound up together, or a linnen cloath folded hard, yet not very great, laid athwart on that part where the bending of the arm is, then to bend the arm ſuddenly, and as much as poſſibly you can, to bring the hand to the head of the ſhoulder; for this way is very ſufficient for thoſe who have it ſlipt forth forwards or backwards.

Fig. II. the hand out of joint is reduced. Now the hand ſlipt forth, either to the inſide or outſide, but moſt commonly to the inſide. It is a certain ſign when it is ſlipt into the inſide, for it cannot be bended; and when to the outſide the fingers cannot be extended. In reducing of it place the fingers upon a Form, or upon a Table. and let them be ſtretched divers waies by two perſons that are aſſiſtants. That part of the bone which ſticks out, muſt be repulſed either by the upper part of the Chyrurgians palm of his hand, or with his heel alſo, and be forced into the former and lower

lower part; but from underneath near the other bone, some soft ball must be put, with the hand downward, where the laxation is on the upper part; but the hand upward, where it is on the lower part.

Fig. III. shews the reduction of the neck bone, which *Galen* describes, *comm. 2. in Lib. Hippocr. de artic. text.* 73. If that part of the cavel bone, which is joined with the breast bone, break forth side waies, or toward the lower part, then *Hippocrates* saith it will be conveniently reduced, if a man be laid on his back, laying a pillow between his shoulders near the back bone, or else a boulster or some such thing, that by this means the whole breast may bend; this he expressed by the word περιρρηδὲς; which the Poet used also, περιρρηδὲν δετραπέζη κατέπεσε.

Wherefore a man lying in that posture, he commands that the Chyrurgian, with one hand, shall thrust back the top of the shoulder which is removed to the side, toward the outward part; for so the parts of the neck bone drawn away, will much retire amongst themselves, the bended posture of the breast conducing very much thereunto; and with the other hand he shall set and bring together, the parts of the neck bone that were dislocated: But the shoulder to be thrust up near the side, sometimes it sufficeth to be joined afterwards.

The XXV Table.

Of the reduction of the ankle bone dislocated; of the extension of the leg broken; and directing of the back bone slipt outward.

Fig. I. shews the reduction of the ankle bone, which *Oribasius Lib. de Machinamentis cap.* 40, describes. The ankle bone sometimes slips forth inwardly; sometimes also it is turned toward the hinder part. When it slips into those parts it is convenient to lay a man upon his back (upon *Hippocrates* his Form) the leg offended being stretched forth; and upon the leg (presently under the knee) one must bind about a cord, after the fashion as it is bound on the top Mast of a Ship A, and extend equally, and bring the ends of it on the hinder part to the axle-tree which is above the head; but on the ankle he must tie the knot or sandal B, and bind the

TABVLA. XXIV.

Fig. I. II

III

the ends of it to the nether axletree; and then either draw the part divers waies, or hold it ſo, and extend from the lower part; and the ſtrings being drawn as much as need is, he muſt force it back again conveniently, when it is ſtarted forth to the inward or outward part; but when it is gone to the hinder part, he muſt draw it out; for now force to draw it forth is very convenient for that poſture.

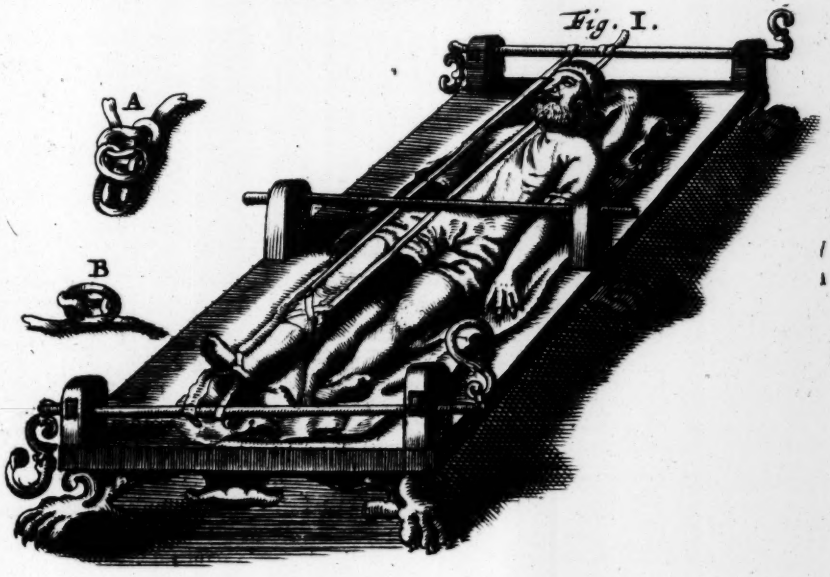
But if in a fracture of the ſhin bone, or the minor forrile, or of both bones at once, the leg cannot be extended with the hands; let the Patient be placed upon *Hippocrates* his Form, and let the carcheſian ligature A be put about the leg below the knee; but let the ſandalian B be bound above the ankles; afterwards let the leg be extended by the bands drawn divers waies, and let the fracture be ſet together.

Fig. II. ſhews the extenſion and impulſion of the *ſpina dorſi*, diſlocated toward the external parts. This is eaſily prepared, if the half Poſt G, in the Form of *Hippocrates*, ſet forth Table XXII. Fig. IV. be removed with the Priapiſcus F, and into the hole of the right Poſt A, ſome hollow piece of wood B be let down, which may receive the Spatha C to be made faſt with the pin D, that it fall not out. This being done let the Patient be laied with his face downwards upon the Form; then let two cords be put about his middle, one above E, and the other below F the bunch of the back, whoſe ends muſt be carried oppoſitely to the axletree, that being turned about they may equally extend the back bone. That piece of Timber which receives the Spatha or croſs bar, muſt have at leaſt three ſquare holes, that the croſs bar, for the greatneſs of the bunch on the back, may be fitted to it, on the upper middle or loweſt part of it. Laſt of all the Spatha, being ſet upon the bunch of the back, and preſſed down with the great violence of the Chyrurgian, the diſlocation is forced in. This way of impulſion differs much from that which *Oribaſius lib. de Machin. cap.* 35. deſcribes, in words and manner, very obſcurely.

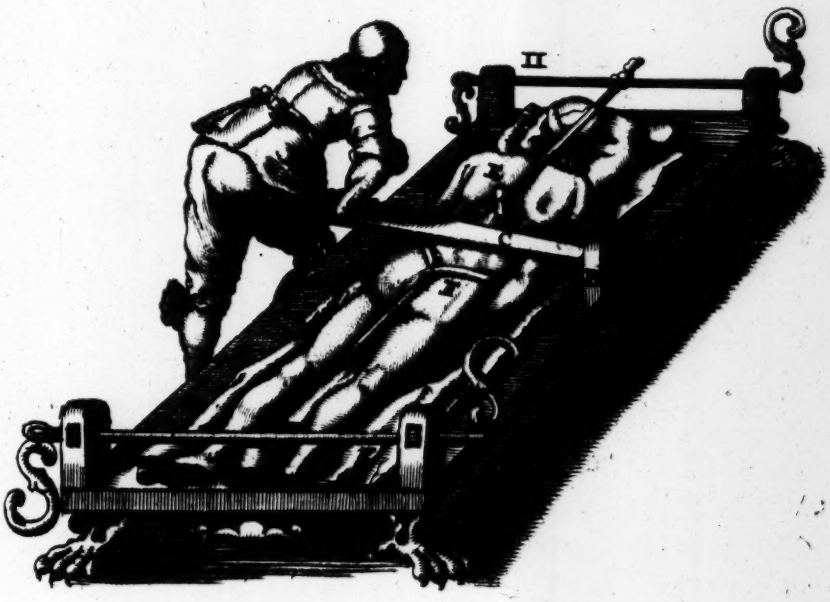
The

TABVLA. XXV.

Fig. I.



II



The XXVI Table.

Of the extending of the Thigh broken into divers parts, and the ſetting of it; of the reducing of the knee that is diſjointed; and of ſetting the whole foot in a mean poſture.

FIG. I. repreſents the thigh broken extended by bands, when it cannot be extended with the hands, and *Hippocrates* his Form is not at hand: Let the Sick be laied on a common Form, with his face upwards; let the band be tied under his arm-pits, and put another band in the ſpace that is between his privities and his fundament: Laſtly, another band muſt be bound above his knee, and his ankle; theſe bands muſt be drawn by ſtrong ſervants, the uppermoſt upward A, the undermoſt downward, till the Chyrurgian hath ſet the fracture. In the ſetting of the knee out of joint, when extenſion cannot be made with the hands, let the upper bands be bound alike, and the undermoſt above the ankles.

Fig. II and III. ſhews the mean figure of the members and muſcles of the arm and the whole foot; which is neceſſary in the extenſion, ſetting, binding and placing of a part either broken or diſlocated. But I therefore cauſed the figure of this configuration to be printed here, that young Chyrurgians, when it ſhall be often pointed at underneath, may at firſt ſight learn it, and may imitate the ſame in their practice.

The XXVII Table.

Of the corruption of the bones, of the arm and ſhin, even as far as the marrow; of the ſhin bone broken with a wound, and the bones ſticking out, and bound with ſwathe bands brought circularly about; and of the cutting off of the end of the hand or foot.

FIG. I. repreſents the corruption of the bone, and of the marrow of the ſhin bone, of Mr. *Auguſtine Mentzen*, whom I cured by the following means. The firſt day, three fingers breadth beneath the Rotula, namely where the right muſcle ends that extends the ſhin

TABVLA XXVI.

Fig. I.

II

ſhin bone, I cut the leg long waies, with a ſtreight pen knife (deſcribed Table II. Fig II.) as far as the lower end of the ſhin bone: I found the bone covered with a movable and brawny ſubſtance; and I bound the wound with medicaments which ſtench blood: Secondly, when the blood was ſtopt, I perforated in three places the callous or griſle, which grew upon the ſhin bone, with Trepans, (repreſented Table III. Figure III, IV and V.) and preſently I cut through the ſpaces between the three holes, by the Pincers (deſcribed Table XX. Figure II.) and I found the ſhin-bone all rotten and corrupt; which from the knee, as far as the end of it below, was parted from the ſound bone, and I drew it forth with my Pullers; then binding the leg with thirteen bands croſs wiſe, I laid it in a Capſula or caſe filled with hards, as Figure X. of this Table ſhews you. But I provided thirteen bands that were different in length (for the thinner and lower part of the leg needs ſhorter ſwathes, but the thicker part requires longer) but they were all three overthwart fingers breadth, which I ſo fitted for the Capſula, which was to be ſet under the leg, that part of every lower band, ſhould cover about half the upper band. This being done, I laid the leg which was to be bound into the Capſula covered with bands; then I turned the ends of the lowermoſt band croſs waies upwards; afterwards the ends of the band which was next to the lowermoſt, and ſo on till I came to the uppermoſt, whoſe ends I faſtned with a double knot; ſee Table XXIX. Fig. 1. We have need of bands of this kind, when the part affected requires often looking into, and to be defended from a flux of humours running to it.

Fig. II. repreſents a ſhin bone wholly corrupted and rotten; as it was after the cutting off of the callous, it was covered withall.

Fig. III. repreſents the place where the corrupt bone was ſcituated, and was now pulled forth with the pincers. It ſhews alſo the hole wherein the head of the minor foſtil, is ſeen more corrupt than the ſhin bone which I cut forth with Trepans.

Fig. IV. is that ſhin bone corrupted, which the Patient laid up for a memorial.

Fig. V. ſhews another fracture in the leg now cured; whereof underneath I have obſerved a whole Hiſtory.

Fig. VI. is the bone of the right arm corrupted, and (like the former leg) covered with a certain griſle: Whereupon I cut the skin, on the outſide of the arm likewiſe with a pen-knife, from the wriſt to the

the ſhoulder; and I dilated the wound laying aſtringents to it. The next day I twice perforated the callous or griſle with *Aquapendent's* Trepans: I cut out the ſpace between the holes with a pair of cizers, Table XX. Figure II. and I uncovered the band under it.

Fig. VII. repreſents the bone of the arm totally corrupted and sharp; which I alſo pulled away with the pullers, but by pieces, without any noiſe or pain.

Fig VIII. ſhews the place where the corrupt bone of the arm lay, which was now pulled forth, which Nature filled up with a callous; ſo that the Patient could perform country buſineſs without any impediment. The Patient was a Country man of *Tappatavia*, whoſe arm a Souldier broke in four places, without any wound, *Anno* 1636. This fracture of the arm was ſet by me and *Nicolas Reuten*, as well as it could be; and in our judgement alſo it was well cured; but we ſuſpecting no harm, the arm began to ſwell again, and was in great torture; at laſt it was a little ulcerated, with a conſumption of the whole body, ſo that we began to think of the corruption of the bone that was ſo often broken, which we alſo afterwards found when we had cut the skin, and cut forth the callous with Trepans; at length we bound the arm about with bands croſs wiſe; and we cured it by remedies which were applied to Mr. *Auguſtine Mertzen*.

Fig. IX. is a fracture of the ſhin bone with a wound, and laying the bone naked, ſo that the ends of it break forth without the skin; which if they be long, they neither can nor ought to be ſet by extending only, for fear of pain, convulſion and inflammation that are like to follow; but either (if it can be) by putting an inſtrument between the ends of the bone, which is like to a cutting chizel, that they may be joined whileſt the leg is extended without violence; or if any of the ends ſo ſtick forth, that it cannot be ſet by the cutting chizel A; but rather it tears the parts adjoining, and cauſes pain, according to *Hippocrates tertio de Fracturis*; it muſt be cut off with the Pincers (Table XX Figure I.) and afterwards the broken bones muſt be ſet in their places, when the bone jetting out is cut off. that the bone is made shorter, they muſt tell the Patient before hand that the leg, or other parts, will be shorter: Which prediction out of *Galen* and *Hippocrates* is true, when the thigh or ſhoulder hath loſt a piece of the bone; but when a bone is cut away from the ſhin bone or arm broken, (the other bones adjoining not being hurt) the ſhortneſs of the limb is not alwaies to

be feared; for the bone keeps the ſound member ſtretched out, untill Nature recompenſes the defect of the part loſt with a certain callous.

Fig. X. is the bone of the ſhin with a wound, broken, with bones ſticking forth, and bound with bands not croſs-waies, but circularly brought about, and laied within the Capſula as it ought to be; this hatching ligature which is aſcribed to *Hippocrates*, ſhall be explained underneath in the cure of a fracture with a wound, in moſt plain words.

Fig. XI. is a hand affected with a ſecret Canker, which is cut off in the ſound part; namely, at the ends of the *radius* and cubit bone: But the fleshy ſubſtance is cut off, with a crooked knife B, as far as the bones; which afterwards are cut off with one drawing of the moſt sharp ſaw C. Note that the arm is not tied with a band upon the place to be cut off, that the infected blood may run out of the veſſels; leſt, being reſtrained, it ſhould extend the arm.

Fig. XII. is a hand that is ſphacelated, which being laid upon the block D, is amputated in the ſound ends of the *radius* and arm-bone, with a chizel E, contrary to *Hildanus*, with good ſucceſs. The arm is bound, above the wriſt, with a band; not only that the feeling may be abated; but alſo that the arteries may be bound after the amputation of the mortified part, without any great effuſion of blood.

Fig. XIII. is a baſon filled with *oxycrat*, in which ſwims a bladder, which being wet muſt be applied to the mutilated part.

Fig. XIV. are two ſwathe bands wrapt together F and G; whereof each hath two ends, to bind the arm, whereof the hand at the end is cut off.

Fig. XV. repreſents a foot that is ſphacelated, which is taken off in the mortified part (according to *Hierom. Fabritius ab Aquapendente lib.* 1. *Pentateuch. cap.* 19. and *lib. oper. chyrurg: titul. de Sphaceli Chyrurgia*) near to the ſound part, with a pair of pincers, Table XX. Fig. I. The mortified part being removed, the reſt of the putrifaction is conſumed with red hot irons (Table XXVIII. Fig. IV.) untill the Patient feels the force of the fire. After this two Plagets are anointed with *Hildanus* his unguent *Egyptiac*, which are applied to the Eſcar; laſtly, long plaiſters I. being laid upon it, the foot mutilated is bound with a wet band K as far as the knee; as the hand is (Table XXVIII. Fig. II and III.) unto the middle of the arm.

Fig. XVI. are divers ſorts of iron inſtruments (Table XIX.) and made red hot, both to conſume the remainder of the putrified part, and are alſo fit to ſtop the flux of blood.

Fig.

Fig. XVII. are two veſſels with repelling medicaments; namely, filled with red wine, whites of eggs, and oil of roſes, wherewith the ligatures are made wet; whether the part be cut off in a ſound or a mortified place, to hinder inflammation.

The XXVIII Table.

Of the way of binding mutilated parts, and broken with a wound; of the Trunk for the foot; and of the general cure of diſlocations and fractures.

Fig. I. ſhews how to bind the arm bands, after the hand is cut off; or how the band (F Table XXVII. Fig. XIV.) is applied to the bones of the arm (Table XXVII. Fig. XI and XII.) cut off in the quick. After that the arteries which bleed, are either drawn forth with a pair of pincers, and bound with a thread, or are touched with red hot irons; there muſt be an aſtringent medicament applied to the wound with Plagets; and upon theſe there muſt be laid plaiſters wet with oxycrate, and preſſed forth; then the arm muſt be rouled with a ſwathe band, the ends whereof muſt be brought croſs wiſe twice or thrice, and one muſt aſcend as far as the middle of the arm.

Fig. II. firſt ſhews a bladder wet with Oxycrate, and laid over the aforeſaid band; ſecondly, another band (G Table XXVII. Fig. XIV.) which, as the former was often brought croſs wiſe, ſhall aſcend with one end to the bending of the arm, to hinder a flux of humours.

Fig. III. is an arm, whoſe hand was cut off at the end, and it was cured with aſtringent medicaments laid upon Plagets; plaiſters being applied to it croſs waies, bound with the firſt band was a bladder wet in Oxycrate, then it was bound with a ſecond band. *This binding muſt be obſerved in every member that is mutilated, whether the operation be made near the quick, or in the quick it ſelf.*

Fig. IV. is a foot, which by reaſon of a ſphacelus, was amputated in the mortified part; in which the putrifaction remaining, is conſumed by iron inſtruments made very red hot, untill ſuch time as the Patient come to feel the heat.

Fig. VI. is a Baſon filled with water and vineger, wherein the plaiſters are wet, as alſo the firſt band and a new ſponge.

Fig. VII. wherewith almoſt all the arm is moiſtned, to hinder the flux of blood.

TABVLA XXVIII

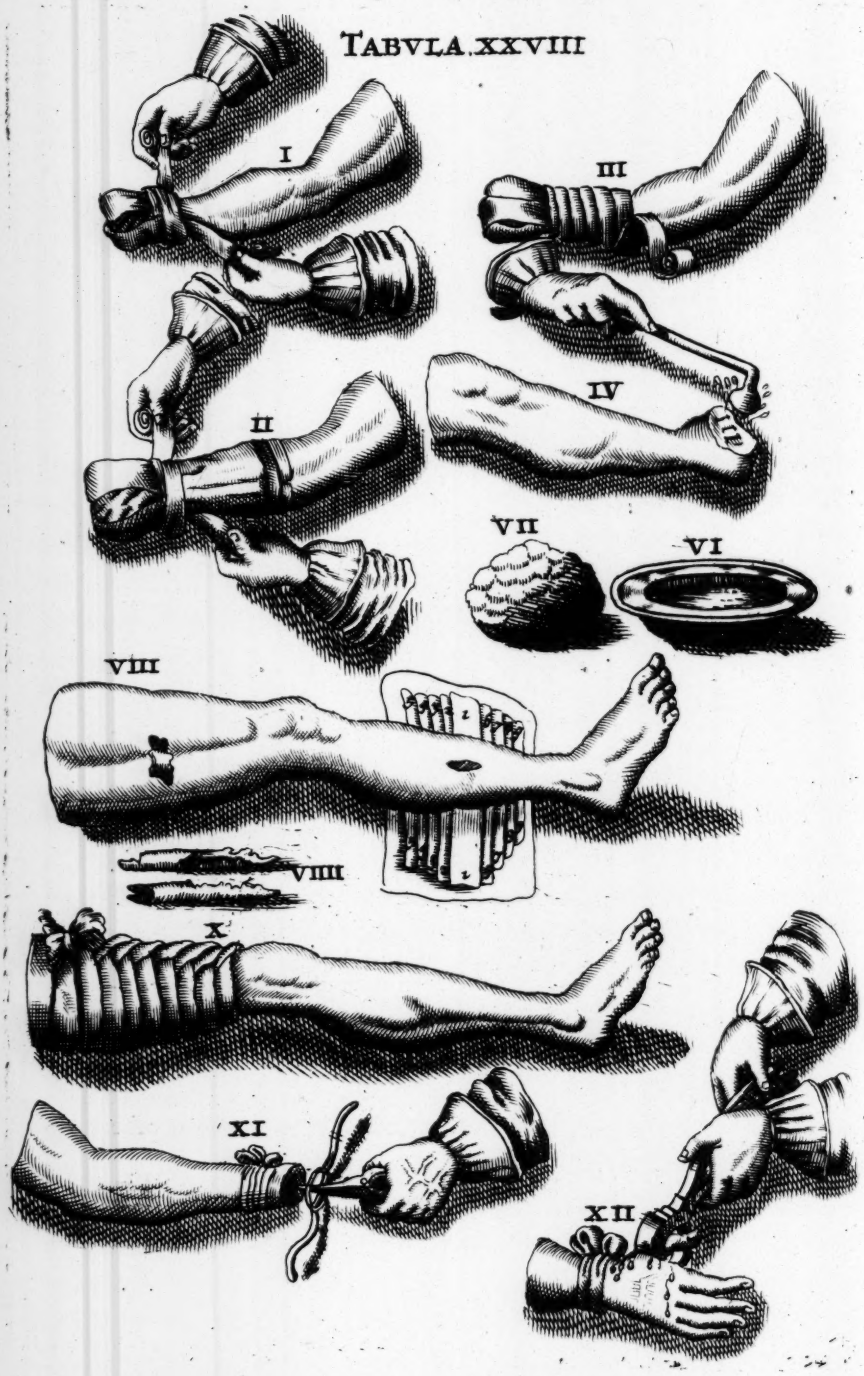


Fig. VIII. is a fracture of the right thigh, with a wound on the outſide. This befell *Katherine Bokin* of *Gien*, concerning whom underneath is found a ſingular obſervation. It ſhews moreover, how upon a leg that is broken with a wound, a hatching ligature (Table XXIV. Fig. X. brought round about; and whereof more ſhall be ſaid in the cure of the fracture) muſt be laid under it.

Fig. IX. is a piece of the thigh taken forth of the wound, and printed both on the left and right ſide of it, that the rottenneſs of it may be better ſeen and conſidered.

Fig. X. is a broken thigh bound with a hatching ligature brought croſs waies, and is to be laid in the long Trunk, Table XXI. Fig VI. For if any man puts a hollow caſe under it, that goes not higher than the ham, he ſhall do more harm than good. For it will not hinder the moving of the body nor of the leg, without the thigh moving; but being applied to the ham it will bring trouble, and force one to that there is no need of. For there is no need for the knee to bend. For if any man when his thigh is bound or his leg ſhall bend his knee, he ſhall put all the ligature out of order; and then it is neceſſary that the muſcles ſhould change their poſtures, and the broken bones muſt be moved out of their places. Wherefore, firſt we muſt indeavour to extend the ham. Therefore a hollow Trunk will be uſefull, which being put under from the hip to the foot, may hold it likewiſe; and principally, if a looſe ligature be put about to the ham with the Trunk, as children uſe to be ſwathed in their Cradles. For when the thigh ſhall be wrinched either to the upper or the lower ſide, (*either whileſt the Patient is aſleep, or when he goes to ſit down, or ſtaies whileſt his bed is made*) in ſuch caſes it will be better contain'd in a hollow caſe. Wherefore a hollow caſe muſt be made for him from the top to the bottom, or elſe none at all. Moreover great care muſt be had for the bottom of his heel, that it may be fitly ſcituated both in fractures of the leg and thigh. For if the foot hang, when the reſt of the leg is faſt bound, of neceſſity the bones muſt appear in the fore-part of the ſhin, in the part where it bunches forth; and that the more, the greater a man's heel naturally is. *Hippocrates de fracturis femoris*, ſee Table XXVI. Fig. II.

Fig. XI. is an Arm mutilated, in which the artery is drawn forth with an inſtrument that it may not bleed.

Fig. XII. is the Thumb of the right hand, which, the wriſt being firſt bound with a ſwathe, is cut off in the quick, by reaſon of a *Sphacelus*: See Table XX. Fig. I.

Guillielmus Fabritius Hildanus hath written a moſt learned work, concerning the cure of a Gangrene and a Sphacelus, which young Chyrurgians muſt read carefully over and over again very often, (beſides the way of ligature by ſwathe bands about mutilated parts, which I have here ſet down for their ſakes) they ſhall find there all things neceſſary for the cutting off of a Limb. He, indeed, labours to prove, by many reaſons, that a mortified part cannot be taken off quickly, ſafely, and without pain, if any corruption be left behind, to be conſumed by red hot burning irons: Yet in my judgment all thoſe reaſons do not prove that the amputation of the part affected, that is taught by *Hierom. Fabritius ab Aquapendente*, doth never ſucceed well: And far leſs do they demonſtrate, that this amputation ſhould be of leſs value, than that which is perforated in the quick part; conſidering, that amputation made in the ſound part, cannot be perforated without pain; whether the fleshy parts be cut with a raſour, or with a cautery with a sharp knife: Nor yet ſafely, becauſe the quick part, bound with a band, eaſily mortifies; alſo amputation upon a ſound part, cannot alwaies be acurately performed; but that ſometimes the parts that lie deeper, ſhall be left more corrupted than the outward parts; which if it happen, than we muſt either atrempt to cut again, which were horrible; or elſe the remaining corruption, muſt be conſumed with red hot irons, according to the latter Practitioners. Not quickly, becauſe a longer time is required to draw forth the Arteries with an inſtrument, and to bind them with a thtead (*and if the Ligature be removed, ſometimes ſuch a flux of blood follows, that unleſs the veſſels be touched with actual Cauteries, it becomes the cauſe of the Patient's death*) than to cauterize the wound preſently with red hot irons: That I may not ſay the operation is the more prolong'd, if after the amputation taught by *Hildanus* and the Ancients, any corruption remains. Wherefore, relying upon reaſons and happy experience, I determine that the way of *Hieron. Fabritius ab Aquapendente*, to cut off any, is to be preferred before the operation of other Ancients.

But if the ſtrength of the Patient, by reaſon of putrid vapours, and a precedent flux of blood, is ſo weak that we are ſure he will faint in the operation; for that time we muſt abſtain from amputation, becauſe it is more excuſable to leave the Patient ſo, than to kill him knowingly. But when there is no hopes left, unleſs the part be cut off, what muſt the Chyrurgian do? Let him touch the mortified part, morning and evening daily, with very red hot irons,

irons, to drink up the putrid humours, that the ſphacelus may not creep up higher; alſo let him give to the Patient, to take down Medicaments againſt poiſon, which may drive the corrupt vapours from his heart, and reſtore his ſtrength by refreshing his ſpirits; and alſo let him apply ſuch things to the external Region of his heart. When his forces are ſomething refreshed (for his former forces are looked for with certain danger of his life) foretelling the danger, let him proceed to his operation deſired. For it is better, the forces thus remaining, to try this doubtfull and moſt miſerable way of cure, rather than none at all. Whileſt I ſtudied Phyſick at *Padua*, a certain Lord of *Vincentium*, broke both the bones of his right leg in the middle, with a flux of blood till he fainted, and a ſphacelus was coming upon it. The ſphacelated foot, the moſt skilfull *Petrus de Marchettis* refuſed to cut off, becauſe of his want of forces, by reaſon of his great loſs of blood; but with red hot irons often applied, he hindred the corruption from ſpreading, and with Medicaments outward and inward he did corroborate him, and refreshed his ſpirits as much as poſſibly he could: At laſt, the Patient being ignorant of it, he cut the mortified part round about with a knife. When that fell down, he conſumed the reſt of the corruption with actual cauteries; and to remove the Eſchar he applied *Vnguentum Egyptiacum ſimplex*. The third day after the amputation of the lower part of the foot, as far as the fracture, the Patient complained of an extream pain of his great toe of his right foot; the Chyrurgian ſmiling, ſaid that he wondred that he ſhould complain of the pain of that toe which was buried above three daies before; with theſe words the Patient was ſo frighted, that he fell into a grievous ſwound. When the Eſchar was taken away, and the muſcles, as they uſe to do, were drawn upwards, the bones ſtuck out four fingers breadth; which being daily covered with dry thin rags, and drying powders, in two moneths time they were ſeparated from the ſound bones. That the precedent Tables, and that which follows next, which treats of the cure of fractures and diſlocations, may be better underſtood, I ſhall briefly ſet down the general cure of them out of *Hieron. Fabritius*, and his Maſter *Fallopius*; for he that hath thoſe two hath all.

The cure of a ſimple diſlocation.

IT is done by five Intentions, 1. Extenſion. 2. Repoſition. 3. Deligation. 4. Depoſition of the part diſlocated. 5. Reli-

gation

gation of the part. Now Extenſion will be eaſily made if four things be obſerved: Firſt, Time: Secondly, fit Inſtruments: Thirdly, Manner: And fourthly, the quantity of the extenſion. The time is propounded by *Hippocrates*, *de Artic.* 64. namely, that it ſhould be done preſently after it is put out of joint, whileſt the part is yet hot. But if extenſion cannot be made preſently, for want of a Chyrurgian or Phyſitian, we muſt do it the ſecond or third day; unleſs we be forced to deſiſt, by reaſon of the inflammation that comes firſt upon it. But on the fourth day, by reaſon of great pains, nothing muſt be attempted; for it is obſerved, that if we attempt then to reduce it, it will not ſucceed well, but many inconveniences will follow it. Whence *Fallopius de Luxationibus*, *Cap.* 3. ſaith, I admonish you that you alwaies have a care to the time; which, at moſt, muſt not exceed three daies; and if the third day be paſt, the term of inflammation muſt be expected; and the time when there is no danger of inflammation, and that is the ſeventh day, as *Hippocrates* warns us 4. *de Artic.* 65. untill which time the ſick man is to be kept very low, with faſting, or rather with a very thin diet. Wherefore if extenſion cannot be made the firſt three daies, we muſt wait till the ſeventh day. The time when you may reduce, is the firſt, ſecond, or third day; or elſe the ſeventh, eighth, or ninth day; but on the tenth, eleventh, twelfth and the reſt it is not ſafe; becauſe then the callous is bred. But before we come to extenſion, the joint muſt be prepared to prevent pain, and to make the reduction eaſie, by heating, faſtning and looſening the parts of the joint; namely, the Muſcles, Tendans and Ligaments; for if they be faſtned, they will be drawn the more eaſily and without pain. But heating and ſoftning of the joint, is made either by rubbing, or by pouring on much hot water, or water and oil; or the decoction of Mallows, Marish-Mallows, *&c.* We uſe chafing conveniently, upon thoſe places where water cannot be poured eaſily; but it muſt be done with the hand, ſmeared with ſome oils or fat matter, as with common oil, or Hogs-greaſe that is not ſalted at all. *Spigelius* in his publick Lectures ſaith, that for to cure a diſlocation, a Bath of ſweet water can do ſo much, that there is nothing better than it.

The Inſtruments for Extenſion, are Hands, Bands and Engines; Hands are uſed, if the diſlocation be ſmall; Bands, if mean; Engines, if great. The hands muſt be the Chyrurgians or his aſſiſtants, as there needs a ſmall or ſomewhat greater extenſion; but bands where it is requiſite, by reaſon of the greater contraction of the

the muſcles, to make a more forcible extenſion. In which things you muſt obſerve firſt the figure; namely, how it muſt be roled; whereof (becauſe it cannot be expreſſed in words) ſee *Oribaſius* his book of bands. 2. The matter which muſt be ſtrong, ſoft and tractable; ſuch is Buck skin ſoft and dreſſed, of which they make breaſts; then they are ſmeared with unguent *Pomatum*, that they may be tractable. Some uſe, for want of leather, linnen cloath a little rubbed. 3 Where they muſt be bound; namely, on the place that is farthest off from the joint diſlocated, leſt the muſcles ſhould be bound, or elſe torn in more violent extenſion, where under the diſlocation there are two joints; beſides *Hippocrates* ties a band about both thoſe joints. See Table XXVI. Fig. I. Mechanick Engines, which are chiefly neceſſary in old diſlocations, or ſuch which are not reduced the firſt three daies, are 1 the Ladder (Table XXI. Fig. III.) 2 The *Gloſſocomum* or *Ambi* of *Hippocrates*, (Table XXI. Figure I.) 3. *Hippocrates* Form (Table XXII. Figure IV)

Hippocrates ſhews the manner of extenſion, 1. *de fract.* 1. when he ſaith that the Chyrurgian muſt make extenſions (which by drawing are made divers waies) the moſt ſtreight that poſſibly he can: Wherefore he muſt obſerve a right line, both by reaſon of the bones, as alſo of the ligaments and muſcles, in reſpect of the *Fibræ*: For keeping theſe parts in a right line, as they lie naturally, extenſion is made without pain or difficulty.

Alſo the Chyrurgian ſhall excellently well know the quantity of extenſion, when he is not ignorant out of what place it fell; which way it ſlipt forth; to what place it is fallen, and where it reſts: when extenſion is almoſt made, the ſwounding of the Patient, or of the ſtanders by, muſt not hinder the operation.

The bone is ſet into its place, by the hands of the Chyrurgian or his ſervants, which muſt be moderately anointed with ſome ſoft unguent, or with oil of roſes. Reduction is made either by circumgyration, or by forcing it back to the oppoſite part to which it is fallen. Theſe motions are not alwaies neceſſary, for ſometimes, when extenſion is made, if the muſcles that were before contracted be only relaxed, the joint will eaſily of its own accord return into its natural place.

Now the ſigns of a part that are well ſet, are theſe: Firſt a natural ſhape of the part, when there is no hollowneſs nor ſwelling that appears about the joint, as there did before it was ſet; but in all things it muſt be like the ſound part, or not far unlike by reaſon of

of a flux of humours. Secondly, there muſt be abatement of pain, which is an inſeparable ſign, for alwaies when the pain is ended, it is a ſign that the bone is reduced; but it follows not on the contrary, the bone is reduced, therefore the pain is ended; for ſometimes the pain may abide, becauſe the muſcles were very much hurt at firſt. Thirdly, as ſome ſay, the crack that is perceived by the Patient, and the ſtanders by, when the bone falls into his ſocket; but this is a falſe mark, and never to be wished for, becauſe that crack is ſometimes made, when the joints are extended and drawn too far; ofttimes alſo the crack is made, when the brims of the bone are broken by the mutual clashing of the bones, after which there ſucceeds difficulty in motion.

In the firſt binding and all the reſt, two things are principally to be obſerved; namely, the figure of the part affected, and the ligature it ſelf; which will preſerve the joint in its ſocket, and will hinder inflammation that is near at hand.

In the figure we muſt obſerve the fashion of the joint, not only that is reduced, but alſo of the whole part; for as ſome figures are natural and without pain, ſo ſome are unnatural and painfull: The figure of the arm without pain, is bended, as of the foot extended right forth, Table XXVI. Figure II and III. *But note that the ſaid Figure muſt be ordered to the part before it be bound: namely, that the bands be not too looſe, or bound too hard.*

The Ligature muſt be made with linnen bands, becauſe they bind better than thoſe that are made of woollen; they muſt be ſoft, that they may cauſe no pain: they muſt be equal, that they may bind equally every where; and they muſt be clean, that the humours which iſſue forth of the joint, may be known by the colours. The latitude of the bands doth vary according to the parts that muſt be bound; for the thicker parts require the broader bands; and the thinner thoſe that are narrower. In the thicker parts (namely, the thigh and the knee) they muſt be four fingers breadth of the ſick party, broad; in the thinner parts (as the leg, ſhoulder, arm and hand) three; in the moſt ſlender parts (as the fingers) they muſt be, at the leaſt, two fingers broad.

Bands are diſtinguished by *Galen* into inward bands, ſuch as bind the joint under the plaiſters, and are called under-binders; and outward bands that are put above the plaiſters: *Hippocrates* uſeth two outward bands, and two inward; though ſometimes one

one band ſufficeth; namely, when the joint is not eaſie to ſlip out.

The length of the bands is divers, in reſpect of the variety of parts to be bound; upon the arm the length of the bands muſt be three cubits (by a cubit I underſtand the ſpace from the top of the middle finger of the ſick party, ſo far as the joint of the elbow) for the legs, they muſt be four cubits; for the ſhoulder, nine; for the thigh, twelve; and for the fingers, leſs by two fingers length. The bands, that beſide their binding they may hinder inflammation, muſt be wet with ſharp Wine and oil of Roſes mingled together; becauſe, being dry, they will not ſtick long faſt together. Others moderately anoint the bands, very happily, with the moiſt cerat of *Hippocrates*, which *Galen* deſcribes *Lib. 6. de compoſ. med. per Gen. Cap.* 4. It is called *Ceratum*, from the wax that is mingled with it; and moiſt, becauſe it is ſoft by reaſon of the oil.

The proportion of the wax and oil, is this: To take one part part wax, and two of oil; or take one ounce of white wax, and two of oil of Roſes. Here we muſt avoid thoſe medicaments that are made of aſtringent powders, and the white of an egg; becauſe they either cool and dry the joint too much, that the bending of it is hindred; or they hinder the humours, that are flowed into it, to come forth. The binding of the joint diſlocated, is common to fractures; but after what manner it muſt be made, I ſhall ſhew underneath, in the cure of a ſimple fracture, and Table XXIX.

The Depoſition of the part is threefold, Alligation, Suſpenſion, and Collocation: Alligation as according to *Paulus*, the Arm is bound to the Thorax, in a laxation or fracture of the ſhoulder or arm. Suſpenſion, as when the arm is hanged, by a linnen cloath put about the neck. Collocation, as when we place the part affected, upon any part of the body, as the Arm upon the Thorax, or upon ſome furniture laid into a capſula. We uſe Alligation and Suſpenſion for the upper parts; but Collocation for the lower parts. But the Depoſition muſt be after the mean figure of the part; ſoft (therefore the caſe is filled with hards, that the Patient may be at eaſe) equal (for a great inconvenience may ariſe out of a ſmall inequality) and it muſt lie upwards, that the humours may not run to the affected part, and cauſe inflammation Table XXVI. Figure II and III. After good binding, and depoſition of the part, there is required reſt alſo; for that the Ancients were wont, when the thigh was out of joint or broken, to make a hole in the bed and blankets,

blankets, that the ſick might void their excrements through that hole, that they might not be conſtrained to move.

Religation is neceſſary; 1. If the part be not rightly bound about; which appears if it be bound too ſtreight, from whence a hard tumor ariſeth in the extream parts of the part diſlocated; or too looſely, which is known when there appears a tumor neither good nor bad; that is, neither mean, nor great, nor hard. 2. If there be itching or pain, that itching proceeds either from things according to nature, as from a more hot temperament; or from things preternatural. For this reaſon, the bands being looſened, let fair water be poured upon the part; not only that that itching may be abated, and the watry humour diſcuſſed, which remained preſſed in by the ligature; but alſo that the ligaments may be corroborated, whileſt the water drinks up thoſe moiſtures collected. Wherefore unleſs the ligature be ill made, or itching be troubleſom, let the part remain unbound until the ſeventh day. But if the ligature be made too ſtreight, you muſt let it looſe the ſecond day, if it be too looſe the third day; but if there be an itching, you muſt let it looſe the third or fourth day at furtheſt. On the ſeventh day, which is the term of the inflammation paſt, the ligature muſt be let looſe again; and luke-warm water muſt be poured on again (not too hot, which might looſen the ligaments) but the bands are not any more to be made wet in the aforeſaid liquor, nor to be ſmeared with cerat of roſes, becauſe the inflammation is over; but the ſeventh day ſhews the corroboration and conſolidation of the joint, and therefore there is need of a medicament that is drying and very aſtringent. Yet if on the ſeventh day there is yet ſuſpition of inflammation, then until the eleventh day we muſt forbear the application of ſtrengthning medicaments. Such are: 1. *Medicamentum Catagmaticum Moſchionis*, the deſcription whereof *Galen* hath *Lib. 3. de comp. med. ſec. gener. cap. 9.* 2. *Cerat. Diapalma.* 3. *Ceratum Barbarum*, which is excellent in winter time. 4. *Emplaſtrum Catagmaticum Renodæi:* Theſe medicaments, before they be applied, muſt be ſoftned either with the muſt cerat of roſes, or of myrtils, for a ſoft chafing of the part affected. Gentle chafing being made, the joint muſt be moved eaſily to this or that place, that the humour, bred in the joint, may be preſſed forth without pain. Theſe medicaments (not weak) when they are ſpread upon linnen, muſt be applied, and the ligature muſt be made ſomewhat ſtreighter

than

than before. After this binding, the part muſt not be unlooſed untill the end of the cure. To know the time when diſlocations are cured, you muſt underſtand that there are three degrees of joints; for ſome are ſmall, and eaſily to be reduced; ſome are mean, and of more concernment; others are great, and hard to be reduced. The cure of the firſt joints of any finger, is performed in fourteen daies; of the ſecond joints of any finger or toe, at the end of the foot or hand, in twenty daies; but of the third joints of the reſt in forty daies: Wherefore the joints of the fingers are ſoddered together in fourteen daies; and therefore in the diſlocation of ſuch joints, from the ſeventh or ninth day, untill the fourteenth day, we ought not at any time to untie the bands in the reſt; we muſt wait for the time of healing, unleſs itching or ſmall ulcers, or ſome humour collected between the head of the joint and the cavity, do ſhew that we muſt unbind looſe ligatures, which muſt be repeated every third day. After this manner we muſt proceed untill the part ſeem to be ſtrong enough, at which time the ligature muſt be untied; and the part that was diſlocated, muſt be fomented with a decoction that may ſtrengthen it. Take of Camomile flowers, red Roſes, Roſemary, Lavender, leaves of Sage, Betony, Willows, Germander, Iræ *Arthriticæ*, Centary the leſs, Wormwood, of each half a handfull; red Wine moderately ſharp, ſix pound; the ſweet ly of Barbers, three pound; let them boil untill a fourth part be boiled away: afterwards laying the cerat on for ſome daies, without binding, the part reſtored muſt be kept in the mean poſture, Table XXVI. Figure II and III: Then we muſt give warning to the Patient, that he ſhall begin moderately to exerciſe his uſual operations.

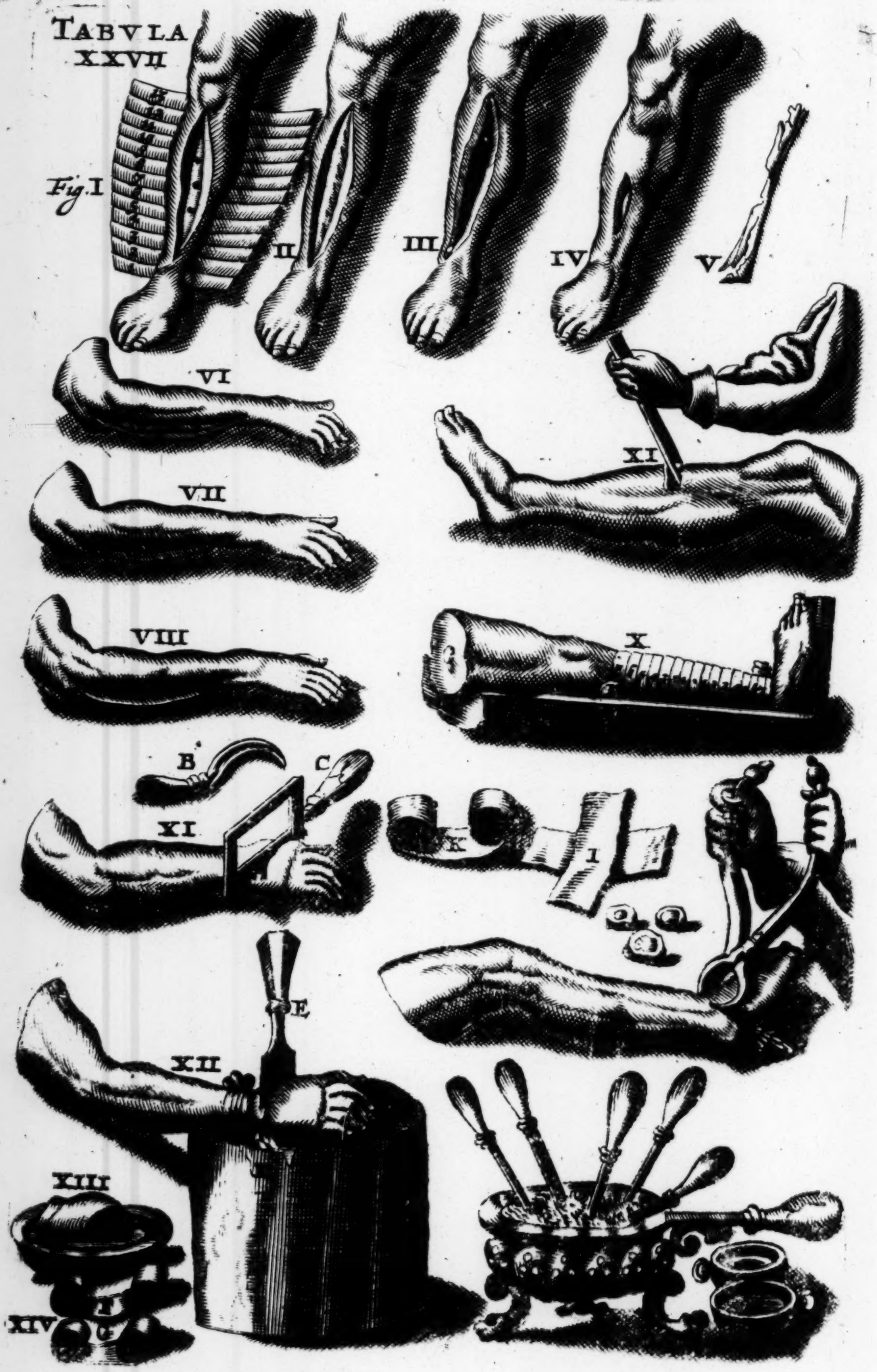
The Cure of a diſlocation with inflammation, riſing before or after ſetting of the part.

IF inflammation urgeth us before the part be reduced, there will be two indications; one of diſlocation, and the other of inflammation; but becauſe inflammation is moſt urgent, we muſt firſt take care for that; for if we ſhould firſt attempt to reduce the part diſjointed, there would follow convulſion or a gangrene of the part, to which a ſphacelus would ſucceed. Wherefore in this caſe we muſt forbear to reduce the diſlocation, and

and the part muſt be placed in a mean poſture, that is not painfull at all. Table XXVI. Fig. II and III. premiſing univerſals, and things preternatural being well diſpoſed; and the belly being kept looſe with glyſters, we muſt lay on the part affected fat wool, and we muſt continually pour on hot water and oil, wherein there is plenty of hot water, and plenty of oil of Roſes. For hot water will diſcuſs the humours, will looſen the parts, and will eaſe the pain; oil of Roſes will mitigate the pain, and by repelling will hinder the increaſing of inflammation. Alſo the pain will be eaſed with new ſhorn greaſie wool; and inflammation is hindred. But becauſe, when inflammation ceaſeth, the humours collected are ſomewhat thickned; therefore, about the end of the inflammation, we muſt chafe the part gently with our hands, firſt anointed with oil of ſweet Almonds, or with common oil; and then we muſt lay on the Cataplaſm of *Nilus*, or *Nileus*, which *Galen* deſcribes *Lib.* 8. *de comp. med. ſec. loc. cap.* 5. and theſe are the beſt when the inflammation declines, by reaſon of the wax, Ammoniacum, Oil, Saffran and Vineger; than which there is nothing better to ſoften, call forth, and to diſcuſs. But ſince theſe things are not common in all ſhops, lay on *Emplaſtrum Oxycroceum Nicolai*, which likewiſe ſoftneth, diſcuſſeth and draweth from the bottom; therefore this is excellent to be uſed in the place of the former. The inflammation being overcome, let the part be extended, reduced, bound and laied as it ought to be.

If inflammation ſucceed after it is reduced, which often happens, both by reaſon of violent extenſion, and alſo of perpetual pain; a ſlender diet muſt be ordred, and a vein opened, and a purge taken, and the ligature muſt be forthwith untied (*though it fall out on the firſt or ſecond day*) and likewiſe water and oil very luke-warm muſt be poured on, untill the Patient find ſome relief thereby. After this let the part be bound ſomewhat looſer, and with fewer ſwathes, wet with water and oil. This muſt be done every day, untill ſuch time as the inflammation declines, which happens for the moſt part on the fifth day. When the inflammation declines, we muſt apply the aforeſaid Cataplaſms, or *Oxycroceum Nicolai*, to reſolve the remainder of the inflammation, with a Ligature yet more looſe. But when the inflammation is taken away, you muſt obſerve the way of cure preſcribed for a ſimple diſlocation.

The


TABVLA
XXVII
Fig. I
II
III
IV
V
VI
VII
VIII
XI
X
B
C
XI
K
I
E
XII
XIII
XIV

The Cure of a diſlocation with a wound, and the bone either onely uncovered, or yet ſticking forth a little without the skin.

IF the joint be diſlocated, ſo that it is either uncovered, or a little thruſt forth without the skin; the accident is mortal, and of more danger to be reduced, than if it be not reduced. For if it be not reduced, inflammation will come upon it, convulſion and ſometimes death. 2. There will be a filthineſs of the part it ſelf. 3. An incurable ulcer, and if perhaps it be brought to cicatrize at all, it will eaſily be diſſolved by reaſon of the ſoftneſs of it; but if it be reduced, it brings extream danger of convulſion, gangrene and death. But ſome men fear theſe kind of dangers in great joints only (namely the Wriſt, Arm, Shoulder, Ankle, Knee and Thigh) which by reaſon of the ſtrong Tendons, and the greatneſs of the ligaments and veſſels hinder Reduction; unleſs the Patient and the ſtanders by, having heard of the great danger, do preſs to have it done, which the Chyrurgian muſt attempt either the firſt, ſecond, eighth or ninth day, that he may not appear to be ignorant in Chirurgery, but not in ſmaller joints, as the fingers, toes and extremities of the hand; which *Celſus* reduceth likewiſe foretelliug the danger, firſt looking to the inflammation and convulſion, then to the wound and diſlocation. Where therefore a greater joint cannot be reduced, firſt care muſt be taken for univerſals and diet, and the part without all extenſion or binding muſt be placed in a mean figure, either hanged from the neck, or elſe gently laied down in a Capſula, that it may remain immovable and feel no pain. Alſo inflammation and convulſion that are at hand muſt be hindred, with ſome medicament that eaſeth pain, concocts, cools and repels. Such a Medicament according to *Hippocrates* 4. *de Artic.* 6. is a cerat with pitch, which is extended upon a plaiſter that was wet with ſharp black wine and warm; firſt preſſed out, and laid warm to the joint.

The Cure of Convulſion ariſing after the reduction of the joint.

IF when the bone is ſet, Convulſion come upon it, the joint muſt be preſently let looſe again, and muſt be very well, for a

long time made wet with plenty of warm water or oil: Alſo the whole body muſt be heated that it may be forced to ſweat, and all the joints may grow hot, becauſe they all ſympathize together: Alſo the beginnings of the nerves muſt be anointed; namely, the nape of the neck, back-bone, the grains and arm-pits, with oils and unguents which are proper againſt Convulſions.

The Cure of a diſlocation with a callous, which hinders the reduction and motion of the joint.

IN joints that before or after the reduction are ill handled, a callous eaſily grows; eſpecially in thoſe that are not compaſſed about with much flesh, as the elbow, knee and foot; other joints ſometimes, but not ſo eaſily, are troubled with a callous, becauſe they are more fleshy, and they eaſily diſcuſs the ſanguine humour, which falls down for the nourishment, and more facile motion of the joints. Now the callous is either hard, or as hard as a ſtone, or elſe not ſo hard and ſtony. There are four marks of a ſtony callous. 1. The joint is ſeen to be moſt ſlender and moſt dry. 2. The Patient cannot move the joint, nor yet the forcible hand of the Chyrurgian. 3. The ſlenderneſs and thinneſs of the part is continual. 4. There were applied medicaments that were too cold, very aſtringent and drying, whereby the aforeſaid humour was turned into a ſtony matter. Alſo there are four marks of a callous ſimply hard: 1. If the diſeaſe be new, for when it grows old, it becomes like a ſtone. 2. Though the Patient cannot move the part, yet the Chyrurgian can. 3. If fit remedies were applied to the joint. 4. There will be ſome tumour in the part which is hard, but not ſo hard as a bone.

The ſtony callous will not be cured by *Celſus* his way without danger, wherefore it muſt be left as it is. But the cure of a ſoft callous, or not ſo hard, is this: Firſt, Empty the body by purging and bleeding. 2. Let there be ordred a good rule for diet, and other not natural things. 3. Let the part be ſoftned with oil, or with this medicament following:

Take Marshmallow roots 3 ounces.
Of wild Cucumbers 2 ounces.
Leaves of Mallows,
Marshmallows, alike two handfulls.

Lin-

Linſeed,
Fenngreek.
Fat Figs, of each 3 ounces.
And one Wethers head.

Boil all theſe in a ſufficient quantity of pure water, untill the flesh of the head part from the bones; and with the ſteem of this, let the joint, with a callous, be fomented for ſome daies; after fomentation, let the part be chafed for a third part of an hour long, the hands being firſt anointed with oil of ſweet almonds and fresh gooſe-greaſe mingled together. After the chafing, lay on the plaiſter of *Nileus*, ſpoken of before; or *Oxycroceum Nicolai*, tempered with gooſe-greaſe. After three or four daies, for the ſoftning and diſcuſſing of the callous, the fume of vineger is commended: Wherefore *Galen* takes a Fire ſtone (or for want of this, a Mill-ſtone) which he makes red hot in the fire; afterwards he pours vineger upon it, wherein ſome piece of gum Ammoniac is ſteeped, that the ſteem riſing from it, and received for a third part of an hour, may not only attenuate the callous, but alſo ſoften it: Attenuation being made, a Cataplaſm muſt be laid on; either this that follows, or one that is ſtronger. Take Barley, Bran and Oxymel ſimple, what is ſufficient to make a Cataplaſm. Note that the ſick Patient (if the joint be reduced) muſt move his joint as much as poſſibly he can, between the uſe of emollients and diſcutients; for by this motion the callous is digeſted. If the joint be not yet reduced, and a callous ariſes, this muſt firſt be cured, and then the joint muſt be reduced; as I ſaid in a ſimple diſlocation.

The Cure of the diſlocation of a joint, which after it is ſet, ſlips again, of it ſelf, out of its place.

A Joint ſlips out for three reaſons. 1. When, after a violent diſlocation, the joint is ill ſet, and the ligaments are not wel dried. 2. When ſome tumour that ariſes from inflammation, and is ill cured, hinders it, that the joint cannot be contained in its place. 3. When a humour runs to the joint which relaxes the Ligaments. The firſt cauſe requires greater driers: The ſecond shews emollients and diſcutients, of which I ſpeak before: The third is worſt of all; which (after that the body is purged by medicaments, a vein opened, and a good diet uſed) requires aduſtion, than which there is nothing better. For this cauterizing firſt conſumes all

thoſe moiſtures by a hard cruſt, which makes a hollow ulcer, which being covered with a cicatrize, contracts the part relaxed; for by cauterizing we heat, dry and digeſt the humours. But we muſt note: 1. To burn the place to which the bone falls; as if the ſhoulder fall under the arm-pit, the burning muſt be made under the arm-pit. If the head of the thigh be out of joint to the fore-part, the fore parts muſt be burned in many places. 2. The nervous parts, ligaments, veins, arteries and glandulous parts muſt not be burned, for fire is an enemy to them; for by reaſon of their drineſs a wonderfull convulſion follows. 3. The burning muſt be made with iron tools, which make no great Eſcars; wherefore ſmall iron inſtruments muſt be choſen like to Olives, with sharp points, and well fired red hot. 4. That after this burning the joint may reſt for many daies, for if it ſhould ſlip out again, the diſeaſe were incurable.

The Cure of the Elongation of a joint.

WHen a joint is lengthned, the more looſe ligaments muſt be bound up with medicaments, not cold (for theſe make the joint ſtiff and unfit for motion) but hot. And ſeeing there is no ſingle medicament that hath the force to heat and to bind alſo, we muſt apply ſome compound, as is the plaiſter of Rams skin. But if the cure ſucceed not by medicaments, there is but one remedy left; namely, that the outward skin, on both ſides (taking care then of the parts aforeſaid) muſt be burned with ſmall iron tools, made excellent well red hot; afterwards the part muſt be bound up with bands proper for it.

The Cure of a ſimple fracture.

A Fracture overthwart or obliquely, is cured in four things. Firſt, By reduction. 2. By preſerving the part reduced. 3. By the ingendring of a callous. 4. By correcting the accidents that come upon fractures. Reduction is performed by two things; namely, Extenſion and Conformation, either by force, or by fitting the parts together.

Alſo in Extenſion we muſt conſider: 1. where. 2. when, 3. the manner. 4. the inſtruments. 5. the quality. 6. the quantity.

Where there needs Extenſion; namely, when the parts of the broken bone do not yet lie right. but one lies over another.

The

The Time is beſt, if we extend preſently, ſo ſoon as we know the fracture; for if that be not done, there is preſently a great flux of humours, by reaſon of the vehement pain, and the muſcles are drawn toward their beginnings, and ſo extenſion becomes difficult; and if we go about it, the broken bones do prick the fleshy parts that lie near unto them, and inflammations, convulſions and other evil accidents follow. Yet extenſion may be attempted before inflammation come; namely, on the ſecond or third day; on the fourth day and the daies following (until ſuch time as fear of inflammation be over) *Hippocrates* forbids to make extenſion. But the latter Chyrurgians, that they may leſſen inflammation, eaſe the pain, and may ſoften the muſcles that are contracted toward their beginnings, do moiſten the broken part with hot water: Others take oil and water, or the decoction of Mallows, Marsh mallows, *&c.* and with the vapour of theſe they do foment the part, for a whole hour together. Where you muſt note that at the beginning of this fomenting, the part affected will ſwell extreamly; but when you have fomented a while; not only the tumour raiſed by the ſteem, but alſo that which was before which hindred the extenſion, will vanish alſo. Alſo the skin of a Calf, newly killed, is an excellent remedy; or any other creatures skin bound about it whileſt it is yet hot, and kept for ſome hours about the part broken, for it hath a notable digeſting force; ſoftning and caſing pain.

The Manner. The broken part is kept in a mean figure, with inſtruments neceſſary for extenſion both below and above the fracture, and it is drawn moſt rightly both waies; namely, upward and downward.

The Inſtruments, ſometimes are only the hands of two Aſſiſtants that are ſtrong, where the attraction is gentle, Table XXIX. Figure I. Sometimes ſtrings of linnen or leather, where we muſt draw harder, Table XXIV. Figure I. And ſometimes Engines, where we muſt extend with the greateſt force, Table XXV. Figure I.

The Quallty varieth according to the magnitude of the bones and muſcles. Whence it is that the radius requires the leaſt extenſion; the bones require greater which are in the top of the hands and feet: Yet greater the arm and the *Fibula*: The ſhoulder and the leg require greater than they; and the thigh bone the greateſt of all.

Moreover in every bone a ſtronger extenſion is indured. 1. In a ſoft body rather than a hard body. 2. The firſt day rather than the daies following, when the fear of inflammation remains. 3. An old fracture than a new.

The Quantity; the part is extended right forth, untill ſuch time as the bones are placed right one againſt another, and do not touch one the other.

Conformation will be made well; if, whileſt the inſtruments that extend, are ſlackned by little and little, and the part is kept in a mean poſture, the parts of the broken bone, which do not yet lie right one againſt another, are ſet exactly right, and the prominent parts of them are hid in their proper cavities, by the hands of the Chyrurgian, ſweetly and gently without any violence at all. Table XXVI. Fig. I This operation ſucceeds excellently well, when the member made conformable, is like to the ſound member in figure, and we can feel no inequality by handling of it, and the vehement pain is ended or abated.

Conſervation of the fracture now reduced, conſiſts in binding and hindring of inflammation, by topical means; binding is made with Bands, Splents and Ferulaes.

Bands, Tab. XXIX. E F G, are provided of old linnen rags, and ſuch as are worn with uſing, that they may be the more tractable; yet they muſt be ſtrong, leſt being extended they ſhould tear; they muſt have no ſeams or knots, that they may bind equally and without pain. But the breadth of the bands is known by the magnitude of the part: for the thicker part requires a broader band, and the thinner thoſe that are narrower.

The length muſt be as much as is needfull; namely, that the binding may comprehend a great part of the ſound part, both above and beneath the fracture, made with requiſite circumvolutions, which muſt be as many as are requiſite to ſtrengthen the broken part.

Splents, Table XXIX. Letter I. are linnen cloaths (the Antients made them of hards kembed out) often folded together; and they are called Splents, becauſe they are like the Spleens of brute beaſts, which uſe to be long and narrow; others call theſe cloaths Piagets: The Ancients called them *Plumaceolos* or *Pulvillos*, ſmall feather bolſters or cuſhions, becauſe they made them of feathers ſewed between two linnen cloaths. Theſe ſplents muſt be ſo long, that they comprehend all the ligature; for if they ſhould be ſhorter, they would not defend all the circumvolutions of the ligature: But the

the breadth of them muſt be the breadth of three or four fingers os the Patient. As for their thickneſs, they muſt be three, and alſo ſometimes four double, where there is need of more ſtrengthningf And when they muſt compaſs the whole part about', ſo many muſt be taken as can go round about the part. Whence *Hippocrates lib. de offic. medic. Let the length of the Splents, breadth, thickneſs and multitude be thus. For length let them be equal to the ligature; their breadth muſt be three or four fingers broad; their thickneſs muſt be three or four-fold double; their multitude that they may go round about, and they muſt be neither more nor fewer.* And *Galen* in his Comment upon this place, in this ſpeech which *Hippocrates* now makes of fractures, firſt he mentions Plagets and Splents, ſo called from the likeneſs of their form to Spleens; which he commends to be made ſo long, that they may equal the ligature, for that they are uſed to defend that; namely, that they may hold that firm and unmoved; ſo broad, as that they may equal three or four fingers breadth of the Patient to be bound; ſo thick, that they may be three or four double, four double where the ligature needs more ſtrength; but where leſs ſtrength is required, he ſuppoſes that thrice double may ſerve the turn. But he adviſes to uſe ſuch a number of Plagets, that they may compaſs the part bound, round about it.

Ferulaes are light chips of wood, Table XXIX. K. (which are laid upon bones broken or out of joint, after that the time of inflammation is paſt, that they may ſtrengthen the fracture the more(not much unlike to Plagets. The Antients, amongſt whom *Hippocrates* was the chief, made theſe Ferulaes of the bark of the woody ſhrub Fennel gigant, or elſe of the boughs of it divided in the middle, whence they came to be called *Ferulæ*. For this wood is moſt fit for this purpoſe, and becauſe it is moſt hard, and therefore the Antients made walking ſtaves of it to lean upon: We, for want of this ſhrub (becauſe in Germany and colder Climates it cannot be had) provide, with excellent ſucceſs, Ferulaes of the lids of Cheſts which Apothecaries and Merchants uſe to put their Merchandize in: And if we cannot get thoſe covers neither, excellent Ferulaes are made of old ſcabbards for ſwords, which becauſe they are covered with leather, they are hard and ſmooth. *Hippocrates lib. de offic. Medic.* ſets down the good conditions of Ferulaes: *Moreover it is neceſſary that Ferulaes be ſmooth and equal, and crooked about the ends, and on both parts of the ligature a little ſhorter: but thickeſt of all where the fracture breaks forth.* He will not have them to be ſharp but ſmooth, that they may be drawn ſometime;

upwards, and ſometimes downwards, ſometimes right out, ſometimes obliquely as need ſhall require; not wreſted aſide, which may turn aſide the ligature and the part; but equal, that they may equally compaſs it about; they muſt be flat upwards about the ends, that is at the lower ends lightly pared away, that they may bind the more in the place of the fracture, rather than upon the ſound parts, which being preſſed will feel pain and be inflamed: At both ends where the ligature is made, ſomewhat shorter; for the ſame reaſon, that they may not preſs thoſe parts which are ſound at the ends, and ſo cauſe pain and inflammation. *Galen comm* 3. *de Chyrurg. offic. text.* 11. writes: But it chiefly concerns a fracture, that the Ferulaes be neither sharp nor wreſted aſide, becauſe both waies they preſs; but thoſe that are wreſted, have this over and above, that they wreſt aſide the ligature; which being wreſted, the part broken is wreſted aſide alſo. He alſo counſels to make choice of ſuch Ferulaes which are flat upwards at the ends; for thoſe that have alwaies the ſame thickneſs even to the end, and are eqnally bound on that part, are better than all others are: But this is not expedient at all to be done, when he will that the Ferulaes shall bind faſter in the middle of the Ligature; and from thence, unto both ends; they should be more looſe, and at the ends looſeſt of all. He will alſo that they shall be shorter, for length, than the binding is, that they may not touch the skin beyond the Ligature; which, becauſe it receives ofttimes the humours preſſed out by the bands, becomes more ſwoln. Alſo he will have the Ferulaes to be thicker where they lie upon the fracture; becauſe that place, above all the reſt, ſtands in need to be preſſed down by them.

Inflammation at hand, is hindred by Anodyns and repelling Medicaments, applied outwardly to the part. I, with happy ſucceſs, alwaies uſe a Medicament which is compounded of sharp Wine, oil of Roſes, and the whites of Eggs beaten together with a ſpatula, when they are mingled in due proportion: If pain be urgent, I leave out the whites of Eggs, and I mingle Oil with the Wine in greater quantity. When this Medicament is uſed, I wet my bands in it Table XXIX. E F called *ſubligamina*; and I preſs it out again, Table XXIX. H, according to the admonition of *Avicenna*; who, *Lib.* 4. *Fen.* 5. *tract.* 1. *cap.* 5. concerning the cure of a diſlocation, commands that we should be carefull, that they be not laid on hot and dry. For when they are hot, they heat, and by heating draw out humours; and being dry, they do not ſtick faſt together.

Where-

Wherefore Extenſion being made, and the fracture compoſed, all things provided neceſſary to bind withall, the part which is yet extended divers waies, muſt immediately be roled about with ſwathes drawn upward and downward. But at firſt we muſt make three circumvolutions of the firſt band above the fracture, and make ſo great a compreſſion, as may ſuffice to ſtrengthen the bones; then toward the ſuperiour part, namely the ſound part, the Ligature muſt be brought, by little and little diminiſhing the compreſſion. Table XXIX. Fig. I. When we have taken in ſufficient of the ſound part, there we ought to end the binding of it. Then we muſt take another ſwathe band, that is longer than the former, that it may come to that place where the firſt band ended; and one or two circumvolutions muſt be made (the contrary way; for if the former were toward the right hand, this muſt be toward the left hand) upon the fracture; and from thence toward the lower part, the binding muſt be brought; diminiſhing likewiſe the compreſſion, by degrees, as we did before. But the circumvolutions of this ſwathe muſt not be ſo many, becauſe we do not here fear the extream parts ſo much; and when we have taken in ſufficient of the ſound part, we muſt then leave off to make any more circumvolutions toward the lower part. Table XXIX. Figure II. the bands return by the fracture, with more ſeldom circumvolutions, untill they come ſo far as the end of the firſt band. But becauſe theſe two bands, now roled about, are too weak to hold the fracture, Splents muſt be applied about the fracture, and the whole part; namely, according to the length of it, to be laid on long waies; not that one ſhall be put upon another, but that betwixt one Splent and another, there be ſo much diſtance as a fingers breadth of the Patient himſelf; theſe muſt be made faſt with a third ligature from a double end, ſo that the firſt circumvolution muſt be made upon the fracture; then the other end muſt be brought toward the upper parts, with more frequent circumvolutions; and the other end toward the lower parts, and the circumvolutions muſt not be ſo many; then again from the lower parts upward, untill we come to that place where the other end of this ſwathe came to an end. Yet both ends muſt be ſo often roled about, that the ends of the Plagets may ſtick forth a little at each end. Table XXIX. Fig. III. It ſhall be the ſign of convenient ligature, when the Patient reports that it

is

is bound firmly; but not preſſed, and more upon the part hurt, than upon the ſound part, and leaſt of all toward the extream parts.

After convenient Ligature, there ſucceeds good Depoſition; which is the middle figure, ſoft, equal and tending upwards. Wherefore let the part that is bound, be laid in a wooden Capſula that is filled up, being wrapt in kembed hards and linnen, and ſo let it remain untill the third day; if the Patient that day he is bound, and the night following, ſeems to himſelf to be bound more ſtreight, and on the ſecond day leſs; beſides this, there will be a ſoft and ſmall tumour on the extream part; for a great and hard tumour ſhews that the Ligature is naught, and too ſtreight, and that there is at hand fear of inflammation and of a gangrene; whereupon the ſick muſt be preſently unbound, and be bound again, but more gently.

If on the third day, after binding the part, the bands ſeem to be too looſe, they muſt be unbound again (but we muſt obſerve that when we muſt unbind the Ligature, before the bones be at all knit, the windings about of the bands, are not to be unbound by little and little, but the part muſt lie ſtill, and the linnen and bands muſt be cut, untill ſuch time as the upper part being uncovered, you may take all things away, the part not being lifted from its proper place. For there is no need to lift up the part, and to let it lie pendulous, and ſo to handle it, *for no good can come to the Patient by that*, untill the Medicaments be applied, and the part be again roled about with bands; and the part that itcheth muſt be often ſprinkled with warm water, that the ſmoky vapours detained in it may evaporate: After that the part muſt be bound with a Ligature which is moderate, yet a little ſtreighter; and let it be laid into the Capſula untill the ſeventh day, at which time the bands muſt again be unbound, and the part muſt be ſprinkled with water, and bound again with bands, yet ſtreighter drawn together; but ſo that they may ſuffer life and nourishment to paſs to the extream part of the member. Wherefore apply to the broken part the cerat *Diapalma*, or *Emplaſtrum Catagmaticum Renodæi*, either ſpread upon one broad linnen cloath, or upon many narrow pieces; and upon this bands having but one end, and wet with ſharp wine, and preſſed forth again; and above theſe muſt be Plagets, firſt wet in wine and preſſed out, and then wet in the white of an Egg beaten;

beaten; and laſt of all, muſt be a roler with two ends wet in the ſame wine. Theſe things being duly performed, becauſe at this time, moſt commonly, the fear of inflammation ceaſeth; the more to ſtrengthen the fracture, Ferulaes (which cannot ſafely be bound on to preſerve the Ligature, untill the ſeventh day be over, for fear of inflammation) with Plagets round about that ſtick forth at each end of the Ligature above, muſt be laid on all the length of the part, with bands L roled about them exceeding looſely: In this order, that firſt they muſt be bound on the upper part: Secondly, on the lower part: Thirdly, upon the fracture, leſt the binding ſhould be more forcible upon the fracture, and ſhould cauſe pain. Table XXIX. *Fig.* IV. Alſo, in applying Ferulaes, care muſt be had to any bones that may ſtick forth, and out of the flesh; for laid upon them, they will cauſe pain and exulceration: Wherefore, let them be laid on the outſides of them, or let them be ſhorter. The part ſo bound muſt be kept unmoved in the Capſula, untill the twentieth day; unleſs Itching, Excoriation, Pain or other accidents require the bands to be unbound, and a convenient application of Medicaments to be made. Notwithſtanding, the Chyrurgian ſhall, every third day, come to ſee his Patient; and ſhall gently faſten the looſe Ferulaes upon the fracture; having alwaies that before his eys, that Ferulaes are put round, not to preſs, but that they may defend and ſtrengthen the binding that is under them.

But when this term is paſt, the Ferulaes and Bands muſt be bound hard; and the part affected, for the generation or nutrition of the callous, muſt be fomented with hot water (untill it ſwell, and no longer) then applying a plaiſter for broken bones, the Ferulaes and Bands muſt be bound more looſely (that humours that breed and nouriſh a callous may increaſe) and the part laid into a Capſula, muſt remain there for two daies; and then muſt be bound hard again, to try the quantity and quality of the Callous. The bands muſt be bound every fifth day after this, and the part being ſprinkled with hot water, muſt be dreſſed with a Cerat, Bands and Ferulaes, looſer than before, untill ſuch time as the fracture may be confirmed with a moderate callous; which is wont to be done in bones of the Arm, for the moſt part, in thirty daies; in the bones of the ſhoulder and leg, in about forty daies; and for the thigh, in about fifty daies:

yet

Yet none of theſe is certain; for nature differs much from nature, and age from age.

The Callous is bread of blood, which muſt not be drawn before the ſeventh day; wherefore *Emplaſtrum Oxycroceum* is dangerous the firſt daies, by reaſon of inflammation preſent, or near at hand. To breed the Callous, others give broths, wherein the leaves of Agrimony, and the roots of Comfry have been boiled. Others give more glutinous meats. The new Practitioners above ſixty years ſince, have found a ſtone, which grows in the Palatinate, which is much commended, by the inhabitants of that place, to breed a Callous; whence they call it ὀστεοκόλλον. Concerning which read *Guilhelmus Fabritius Hildanus Cent.* 1. *Obſerv.* 90, 91 & 92. and *Sennertus Lib.* 5. *Inſtitut. part.* 2. *ſect.* 1. *cap.* 7. Outwardly not only *Ceratum Barbarum*, and *Diapalma Galeni* are ſafely applied; but alſo *Emplaſtrum Oxycroceum Nicolai*, and *Catagmaticum Renodæi*: *Barbarum* and *Oxycroceum* muſt be laid on in Winter, *Diapalma* in Summer, and *Emplaſtrum Renodæi* Spring and Fall. Sometimes ſome ſymptoms follow fractures, as Itching, Excoriation, a Callous greater or ſmaller, pain, ſmallneſs of the parts, or winding aſide of it; all which things require the Chyrurgian's help.

Itching will ceaſe if the part bound be fomented with warm water untill it wax red; and a little more, that the matter attracted, may be again digeſted. When the part affected doth not conveniently admit the pouring on of cold water, it is with profit enough held over the fume of the water. *Note that the ſcratching muſt be forbidden the Patient, when it doth itch, becauſe it is the worſt thing; and beſides Excoriation will attract humours, and raiſe very grievous pains.*

Excoriation which often ariſes, when the unlooſing of the bands is deferred longer than it ought to be; and again when the Patients are impatient and ſcratch, is cured by the pouring on warm water, as I ſaid for the cure of itching; and by applying unguent *de Ceruſſa*, which cools and dries.

Pain is mitigated by fomenting with Water and Oil, or with the decoction of a Wether's head with Camomile flowers.

The Callous is bred greater than it ſhould, when the Patient uſes a fuller diet than he ought to do, or the Phyſitian is more negligent in the cure; if he do not feel his Pulſe, and if he bind the bands too looſe. This is prevented if you take away from his diet, and the quality of the callous be ſometimes tried, and the bands bound ſomewhat ſtreighter. It is diminished, firſt with emollient Medicaments;

caments; and next, with emollient and diſcutient mingled together (ſuch as were propounded for the cure of a diſlocation with a Callous) untill it come to a mediocrity. A Callous that is too ſmall, hath contrary cauſes, and therefore it is to be preſerved by contraries. It is augmented with a more thickning diet, and attraction of the aliment to the part affected, by pouring on hot water (yet with that moderation, that whileſt the part is yet lifted up, we do deſiſt before it fall down again) and by the more looſe ligature of the bands.

Extenuation of the part proceeds, either from the too hard binding of the bands, or for want of glutinous nourishment. If binding cauſe Extenuation, the bands muſt be bound looſer: If want of nourishment be the cauſe of ſmallneſs, let nutriment be attracted by fomenting with hot water, untill the part wax red; and then lay on ſome Pitch plaiſter upon it, ſpread upon a broad linnen cloath; and let it be oftentimes duly drawn off, taking heed afterwards that we bind not the bands too hard, which might again repulſe the nutriment drawn thither.

Diſtorſion, or ill conformation of the part, proceeds either from the neglect of the Chyrurgian, when he makes leſs extenſion, joining together or binding than he ought to do; or it is the fault of the Patient, when he ſtirs the broken part before the Callous is grown ſtrong, or ſtands upon it; or elſe it is the fault in the fracture, eſpecially when the thigh is broken. *For the bones of the thigh, though you do draw them out by force of extenſion, cannot be held ſo by any bands; but when the firſt Intenſion ſlacks, they will run together again; for here the thick and ſtrong fleſh are above binding, and binding cannot keep them down.* Hippocrates *de fract.* which *Celſus* ſeems to confirm, *Lib.* 8. *Cap.* 10. where he writes of the cure of the legs and thighs. For we muſt not be ignorant that if the thigh be broken, that it will be made ſhorter, becauſe it never returns to its former ſtate: And *Avicenna Lib.* 4 *Fen.* 5. ſaith that it is a rare thing for the thigh once broken, to be perfectly cured again. Theſe words admonish us, that we ſhould never promiſe a perfect cure of the thigh; but rather, uſing all diligence, we ſhould foretell, that it is doubtfull that the Patient will be alwaies lame; leſt when this ſhall happen from the nature of the fracture, or which moſt frequently falls out, from the impatience of the ſick perſon, it may be imputed to our miſtake; and inſtead of a reward, bring us a diſgrace. Alſo ill conformation may come by reaſon of the fracture, when a peece of the bone is contained between both the

bones

bones that are broken, which may hinder them to touch one the other. The bones that are diſloca ed, either by the Phyſitians or the Patients fault, muſt not be broken again (unleſs it cannot be helped, by reaſon of the great hurt done to the part in its operations) if the Patient be old and weak, the Callous be of long ſtanding and hardned, and the bone be great, as are the ſhoulder and thigh bones. But if the hurt be great, the Patient be young and ſtrong, the Callous new, not above ſix moneths ſtanding; let the Callous be ſoftned for fifteen daies, with pouring on of liquid matter, with baths and emplaiſters; then let the part be drawn at both ends, either with mens hands, cords or engines, divers waies, as need requires, untill ſuch time as the Callous ſhall be broken, and the parts of the broken bones can be fitted together with the palms of the hands: After this, the fracture muſt be cured as I ſaid before. If any piece of the bone wreſt aſide the whole part, there muſt be inciſion made with a ſharp knife, Table II Fig. II. as far as the broken bone; and the ſplint of the broken bone, which hinders the joining together, muſt be pulled out with the Pullers; and then the fracture muſt be fitted by extenſion, bound and laid down, as we deal with a new fracture. In the ſaid Diſtorſion of the thigh the bone muſt not be broken; for it is better for a man to live and be lame, than to indure a dangerous operation, with great torments and fear of the ſame miſchief.

But the Diſtorſion of the thigh is prevented, if the part be kept extended in the inſtrument called *Gloſſocomum*, Table XXI Figure IV. (which is appointed for this uſe in the next place) in before, and after the binding of it, untill ſuch time as the fracture be perfectly cured.

Of the Cure of a Shingle Fracture.

IN a Shingle Fracture, or that which is made according to the length of the bone, the bands muſt be bound ſtreighter than in other fractures; that the bones broken, which are departed broad waies one from the other, may be brought again to a mutual and cloſe touching one of the other, that they may not fall back again. *Galen. Lib. 6. Meth Med. Cap. 5.* Beſides we muſt do all things which are to be done in an oblique or overthwart fracture, as I ſaid.

And theſe things ſhall ſuffice to have been ſpoken of the cure of ſimple fractures, where the bones do not ſtick forth, nor yet any wound is joined with them. Now I will briefly declare how a fracture

cture, with a wound, muſt be cured. There are divers kinds of fractures with wounds; for either the bone is made naked of the *Periostium* and the flesh; or elſe it is yet covered with them; in both again we expect that ſome great part, or ſmall, or no part of the bone ſhall come forth.

A Fracture with a ſimple wound.

IN which, neither the bone is made naked of its coverings, nor any part of the bone is come away: it is cured as a fracture without a wound; namely 1. With convenient Extenſion, 2. With due joining together, and this is followed by a mutual touching together of the lips of the wound; and by keeping them ſo, when they are thus brought together, by linnen cloaths that are Plaiſters laid croſs waies upon them, and by bands. 3. By Deligation. 4. By Depoſition.

Yet here about the cure we muſt note: 1. That Extenſion be preſently made, by a Chyrurgian, on the firſt, or at furtheſt on the ſecond day; namely, before any great inflammation falls upon the part. If the Chyrurgian be not called ſeaſonably; but on the third, fourth or fifth day, in which the inflammation is near at hand, or elſe is begun, then extenſion muſt not be attempted until ſeven or a few more daies be over; and in the mean while, the Phyſitian ſhall uſe all the force he hath to prevent inflammation; both by removing the antecedent cauſe, by diet, and Chyrurgery, and Phyſick; as by taking heed to the part affected by Anodyns, Repellers, and convenient Depoſition of the part as much as may be; and by covering the wound with ſuch things as ſhall cauſe ſuppuration. When the danger of inflammation is paſt, the fracture muſt be ſet either by Extenſion alone, or elſe by help of the Levitor alſo; then it muſt be bound with three bands, and a ſufficient number of plagets, and ſo laied down eaſily.

Secondly, The Extenſion muſt not be ſo violent, as in a ſimple fracture, becauſe the fleshy, muſculous and nervous ſubſtance, is already torn, bruiſed and hurt; for if we do otherwiſe, extream pains and convulſions will follow, with the greateſt danger of the Patient's life.

Thirdly, The firſt band muſt be ſomething broader than the wound it ſelf; eſpecially at the beginning, from whence we begin to wind it about, that it may comprehend the lips of the wound on both ſides. For if the band be too narrow, then it would hold the ulcer bound in, and would cauſe pain.

Fourthly,

Fourthly, The bands alſo muſt be bound leſs cloſe than for a fracture without a wound; leſt the wound being preſſed, pain and inflammation ſhould ariſe; and for the ſame reaſon, let them alſo be more ſoft than for a ſimple fracture. Let the part be untied the third day after extenſion and direction, and be bound again, yet ſo that the ligature may preſs it ſomewhat more (to make the part more ſlender) ſo long as the fear of inflammation remains, unleſs pain perſwade to do otherwiſe. But in the ſecond binding let not the ligature be made ſtreighter, but rather looſer, that there may be paſſage left for the blood to come forth, which muſt be the matter of the callous.

Fifthly, Ferulaes muſt not be laid to the wound; and if they muſt be laid on, they muſt be placed on the ſides of the wound, and the oppoſite part, untill ſuch time as the wound is cured. But it ſeldom falls out, that a ſimple wound in ſuch a fracture is not covered with a cicatrize, at the ſecond or third dreſſing, or at leaſt not filled up with flesh. When the wound is healed, if the bone be not yet ſtrengthned, we muſt do as we did for a ſimple fracture. But if in the mean time, namely on the eighteenth or twentieth day, or upon any other day, the wound grows worſe, and the fracture of the bone threatens an impoſtumation (for the ſeparation of the bone cannot at firſt be foreſeen alwaies, unleſs the fracture wants its conformation, or the bone lieth a long time uncovered) (*which is ſhewed by much atter, which is not proportionable to the greatneſs of the wound, by the lips of the wound turned inwards, and by the dull flesh bred in the wound*) we muſt conſider whether the piece of the bone be great or ſmall? If it be great, the ſigns propounded are greater; if ſmall, they are ſmaller. 2. Whether that piece which muſt part from the bone be yet parted, or remain upon it ſtill? That is known, when the Patient, minding of it, finds a ſecret motion; or not minding of it, perceives a pricking pain: This, when the Patient finds neither ſecret, nor yet open motion.

A Fracture with a Wound, in which the bone is not made naked; yet a great piece of the bone, or many pieces (as in wounds made with gun-ſhot) are known that they will come off preſently, or elſe afterwards.

IF they will come off preſently, this requires a ligature that is of another faſhion, and far different from the former, according to the moſt ſudden ſeparation of the bone, that the part may be daily bound and unbound, without any moving of the fracture. The moſt approved way of binding, is that of *Hippocrates*, whereby the matter is not ſtopt in, the fracture is ſtrengthned, inflammation is hindred, pain is not cauſed, and the moſt ſpeedy ſeparation of the bone is procured. To perform all theſe things, let double Plagets be provided, made of linnen cloath, not narrower than that they may ſufficiently cover the lips of the wound; as for length, let them be ſomewhat longer then to go once about the part; and let them be as many in number, as ſhall ſuffice to make a hatching ligature. Table XXVII. Figure VIII. Theſe muſt be wet with a mixture of ſharp wine, and oil of Roſes, to eaſe pain, and to hinder inflammation; they are laid upon a broader linnen cloath, in that order that the middle Plaget may cover the next to it, and theſe the middle of thoſe that are further off. Theſe things being provided, and the fracture being joined, and a ſuppurative medicament being laid to the wound; namely, *Galen's Tetrapharmacum*, that linnen cloath with the Plagets ſo diſpoſed, muſt be laid under the part to be bound, ſo that the middle Plaget muſt come under the fracture, Table XXVIII. Figure VIII. Then the Aſſiſtant ſhall hold one end of the middle Plaget ſtreight, and the Chyrurgian ſhall hold another, which muſt be ſo brought about, that far from the ends they may cut one another circularly, and may bind the part that is hurt cloſely, as far as it is lawfull, rather than neceſſary, for fractures with a wound, and where a piece of the bone is to come away. The middle Plaget being brought into a circle, let alſo the firſt of the upper Plagets be brought about, then the ſecond, then the third, and ſo forward untill we come unto that part, to which the firſt band, Table XXIX. Figure I. ſhould aſcend if there were no wound. Theſe upper Plagets being fitted, we muſt likewiſe order the firſt of the lowermoſt, then the ſecond, then the third, then the fourth, and ſo forward deſcending as far as the ſound part, Table XXIX. Figure II. Theſe medicaments

with their Ligature muſt be applied (daily wetting the bands only with wine and oil) untill ſuch time as the term of the inflammation be over; then by all means we muſt ſtrive that the bone which is coming off, may be thruſt out ſo ſoon as poſſibly it may be, helping nature by an injection of *decoctum divinum*, and laying on *ceratum ſacrum* of *Galen*, upon the wound (that it may only comprehend the lips of it) and a *Diapalma* about the affected part. Note, lay on the plaiſter *Diapalma* with ſeven ſingle Splints (be they more or fewer) and let their ends be brought round about, beginning at the middle one, and afterwards aſcending and deſcending, as we uſe to do, with double Plagets. The Splints with the cerat being laied on, lay on the Plagets made of double linnen cloath, and wet in ſour wine, that they may ſtick the faſter together.

The bone being thruſt out into ſight, and it being drawn forth with the Pullers, if it can be done without violence, the wound muſt be healed with *ceratum divinum*. But when the wound is brought to cicatrize, the part muſt be kept in reſt, untill the fracture may grow ſtrong, Ferulaes being laied round about it. Note farther, that if it be needfull to remove the bands, either for their foulneſs or hardneſs, the part muſt be lifted up; but it muſt be preſently laied down again upon a broader cloath of linnen; upon which thoſe ſmall linnen cloaths doubled were already laid. Table XXIX, Figure VIII.

If the bone appear that it will not preſently part, but will come away afterwards, the Ligature (which is made with three Bands and Splents) muſt be changed into a hatching Ligature, deſcribed even now, untill the bone do ſeparate. The bone that is great enough (ſuch as are thoſe printed Table XXVII. Figure IV and Table XXIX. Figure IX.) being parted, the circular dreſſing, with the plaiſters (Table XXVIII. Figure VIII. in the leg) muſt be changed into a croſs form (Table XXVII Figure I) and the Ligature muſt begin from the loweſt Plaget, and muſt end in the uppermoſt (Table XXVIII. Figure X.) that the moiſture, collected in the cavity of the bone ſeparated, may be preſſed out of the wound (which being thruſt down, by the Plagets deſcending, would make a large hollow place) when the wound is brought to cicatrize, Ferulaes may be laid on to confirm the fracture.

A Fracture with a wound, wherein the bone is made naked of the Perioſtium, *yet it doth not ſtick without the wound.*

THis is cured: Firſt, By moderate extenſion of the part. Secondly, By convenient joining together. Thirdly, By fitting the lips of the wound to touch one the other. Fourthly, By fit Ligature. Fifthly, By fitting depoſition. In binding we muſt conſider, whether any part of the bone will come off or not? None will come off, if the bone that was made naked, be preſently covered with a skin again. Some will come off, if the naked bone be long expoſed to the open air. If none, or but a ſmall bone, will come off, the binding muſt be made with three bands and plaiſters, as in a fracture with a ſimple wound, and wherein there is expected a ſeparation of ſome ſmall bone. If a great bone be to come off, the part affected muſt be bound with a hatching Ligature; as I ſaid, even now, for a fracture where a great bone was to come away.

A Fracture with a wound, where the bone ſticks out of the wound.

BEfore it be reduced, we muſt conſider whether the bone, ſticking forth, can be brought again to its own place, by help of due extenſion or not, without violence and danger of convulſion? And if it can be reduced without danger, let it be reduced; but if not, let it not be reduced. The ſigns of dangerous reduction are, great ſticking forth, inflammation, and the part grown hard by contraction of the muſcles: But eaſie reduction appears by a ſmall bone ſticking forth, when there is no inflamed tumour, and the part is ſoft. If therefore it cannot be reduced, of two evils the leaſt is to be choſen; the naked bone ſticking forth (with prediction of the ſhortneſs of the part that will be afterwards, leſt that ſhould be laid upon the Chyrurgian as his fault) muſt be nipped off with a pair of Plncers, Table XX. Figure I. and afterwards the fracture muſt be joined by moderate extending of the part. For it is better to make the part ſomething ſhorter, than to leave the bones not join'd together, or to extend them violently; both of which would bring convulſion and death to the ſick Patient. If the bone diminiſhed cannot yet be ſet, by the moderate extenſion of the hand; that extenſion muſt be helped, according to *Hippocrates*, with a levitor or ſome cutting chizel, put in between the

broken bones, Table XXVII. Figure IX. The fracture being compoſed, the part muſt be bound as we ſaid for a fracture with a ſimple wound. But we muſt cut a hole in the bands and plaiſters juſt over the wound, that we may daily lay on medicaments upon a great wound. The reaſon why the bands muſt be made with this hole, is this, becauſe a great wound, and therefore to be cured by the ſecond intention, breeds plenty of Atter, and therefore requires often looking to; but the bone that is diminished, for fear of a new contraction of the muſcles, forbids us to lift up the part often, or to unbind the bands; wherefore we muſt take the middle way, that we may ſatisfie both the fracture and the wound.

I have cured very many with this way of binding; amongſt the chief of them, there is a young man yet living, who about the twentieth year of his age, fell from a high place in the night, and broke both the foſtils of his leg in the middle, with a great ſticking forth of the minor foſtil; which unleſs I had cut it off with a pair of pincers, Table XX. Fig. I. I could not poſſibly have joined the broken bones. This Patient, in four moneths time, began to walk with a ſtaff; and he went afterwards as if he had never broken his leg, or had loſt no part of the bone; which muſt be well obſerved, for it ſeldom happens that the Patient, with a double fracture, with a wound and loſs of the bone, should not halt after he is cured. This kind of Ligature, though it require great diligence of the Chyrurgian, yet oftentimes the Patients cured ſhew themſelves ungratefull: Wherefore it muſt not alwaies be charged upon the Phyſitians, that they are Mountebanks, who ſometimes begin their cure as *Hippocrates* dictates, from taking a reward, and require that firſt,

> Whileſt the pain laſts, that when the ſick man's well,
> What he paid for it he may others tell.

when a ſmall bone ſticking forth can be reduced, without danger of convulſion and violence: firſt the part muſt be extended moderately: then the fracture muſt be compoſed; And if the bones can hardly be united by extenſion only, for fear of great pain and more dangerous convulſion, let not ſo ſtrong extenſion be made; but let there be put, between the parts extended of the divided bone, the broader and the narrower end of a Levitor, that it, lying under that part of the bone which is moſt preſſed down, and leaning upon that part which is moſt prominent, may help the extenſion, untill ſuch time as the bones ſhall ſeem to be placed one right

against

againſt the other; then, by degrees, let looſe the extenſion, and draw forth the Levitor.

If perhaps the bone, upon which there leans a convenient Levitor, hath in the upper part many broken ſplints, or ſomething that is sharp, that there is no convenient place for the Levitor, they muſt be taken off with a sharp chizel, Table VI. Figure III. but this with the pincers, Table XX. Figure I. muſt be nipped off, that there may be a fit place made for the Levitor. When the bone is reduced; we muſt conſider whether any part of the bone will come away or not? If it be reduced preſently, nothing will come off; but if it be not ſet preſently, ſomething may come off. If nothing be to come off, the part affected muſt be bound (firſt laying a ſuppurative Medicament to the wound) as I ſaid of a fracture with a ſimple wound. But if ſomething be looked for to come off, we muſt order our Ligature, according to the manner appointed for a fracture with ſeparation of a great bone.

The XXIX Table.

Of the proviſion to bind a broken Leg, and Hippocrates *his way of binding to be obſerved in diſlocations and fractures.*

Letter A. Shews a glaſs with ſour Wine, *&c.*

B. One filled with oil of Roſes.

C. Three Eggs.

D. The beating of whites of Eggs.

E F. Two bands whereof *Hippocrates* writes, *de offic. Med. text.* 3. But being there are two under bindings of linnen rolers; one of them E ends from the place upon the ſuperiour part; the other F goes down from the place to the inferiour part.

G. Is a Roler with two ends.

H. Shews the wetting of the bands, for it behooves to have the rolers not dry, but wet in ſome liquor. *Hippocr. de offic. Med. text.* 16.

I. Are the four-folded Plagets, with the liquor preſſed forth of them.

K. Are the Ferulaes crooked upward at the end.

L. Are the Bands, wherewith the Ferulaes are bound on.

TABVLA XXIX

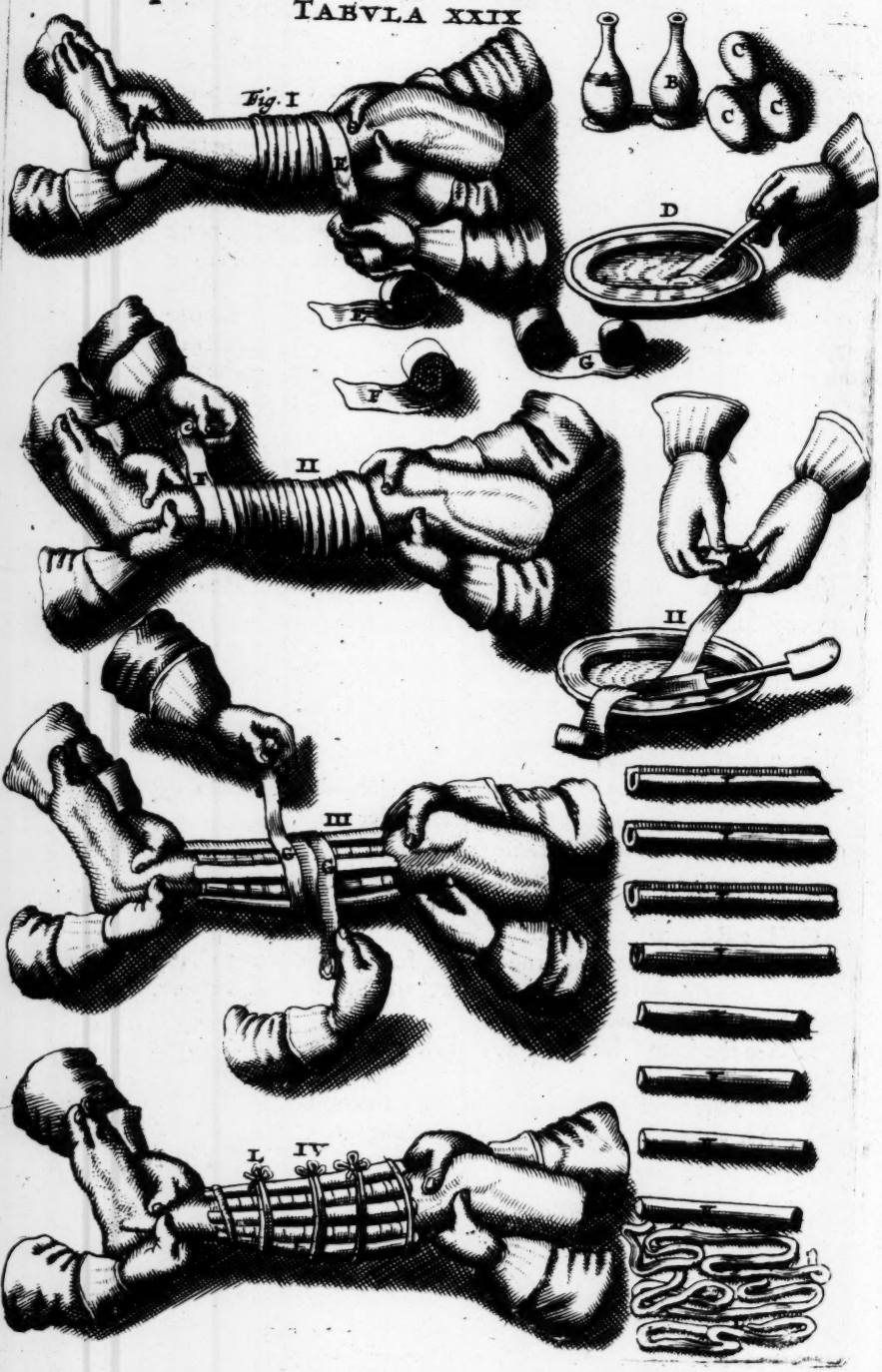


FIG. I. ſhews how *Hippocrates*, whileſt the part is held ſtretched forth by the Aſſiſtants, roles the band E three times toward the right hand, about the part affected; and then brings it upwards, untill it come to a good part of the lim, with four or five or more windings about it.

Fig II. shews how he winds about the ſecond roler F, which is twice as long as the former, the contrary way (for the firſt is roled about toward the right hand upwards, this is wound about towards the left hand downwards) namely, once about the fracture; then again three or four times or oftner, below the fracture, unto ſome convenient part of the member: The remainder of the band, which the Chyrurgian holds in his left hand, muſt be wound about upwards, untill it comes to the end of the firſt band.

Fig, III. explains how he laies the wet Plagets I all at length upon the fracture (ſo that betwixt one and the other, there muſt be not more than two fingers breadth diſtance) and he binds them with the band with two ends G; winding the end G * upwards; and the other G downwards, after that upwards, untill it come where that ended.

Fig. IV. sheweth how, after the ſeventh day, whereon, for the moſt part, all fear of inflammation is paſt, he laies the Ferulaes with the Plagets, and the upper Ligature made by the band G; and binds them faſt with three girts. For *Hippocrates de fractur. text.* 23. in theſe words deſcribes the cure of broken bones; then at length *things neceſſary being firſt provided; the fracture being join'd; and the part yet being extended in a mean figure*) we muſt bind it with a linnen roler, laying the beginning of the firſt band upon the fracture, ſo that it may hold the fracture firm, but yet not preſs it violently. When you have wrapt the firſt band about the ſame place, the ſecond and third time, you muſt carry it upward, that you may thereby ſtop the flux of blood from coming to it, and there let that end; and that band, in reſpect of the ſecond, muſt not be long in compariſon.

Text. 27. The other band, at the beginning of it, being wound about the fracture once, then muſt it be carried downwards, and not preſſing ſo much, it muſt take greater diſtance in roling of it about, ſo that it may come unto that place where the firſt did end.

Text. 32. After this, Plagets ſmeared with ſome Cerate (or ſome other convenient medicament) are to be laid on, for ſo they will ſtick the faſter and ſmoother. Which then muſt be ſo bound on with

TABVLA XXX

rolers, (*but a band with two ends, will perform the office of three bands*) changing the order ſo amongſt them, that they may be carried ſometimes to the right hand, ſometimes to the left hand, and very much indeed from the lower part upwards; and ſometimes from the upper part they muſt be carried downwards.

Text. 41. But when, after the fear of inflammation paſt, you bind the rolers, you muſt lay on the Ferulaes, and they are to be contained with bands very looſe, that they may ſtay only there; and that the laying on of the Ferulaes may not add any preſſure to the part. And this ſhall ſuffice to be ſpoken in general, of the cure of a fracture and diſlocation.

The XXX Table.

Of the preparation and manner how to burn a fontanel in the coronal ſuture, and the binding of it; alſo how to dilate wounds of the head croſs waies, and to ſcrape away the doubtfull ſmall chinks of the skul.

HEre we ſhould declare, whether the uſe of an actual cautery be convenient upon the coronal ſuture of the skul? But becauſe *Iulius Cæſar Claudianus* 3. *Reſponſione Medicinali*; *Thomas Fienus Lib.* 3. *de cauteriis, cap.* 22. and *Marcus Aurelius Severinus*, *Pyrotechn. Chyrurg. Lib.* 2. *p.* 2. *cap.* 11. have diſputed this queſtion, I will not do it over again, but I will proceed to explain the Figures of this Table.

Fig. I and VII. ſhew the proviſion of things neceſſary, both before, at, and after the operation; namely, divers inſtruments, a Cabbage leaf ſmeared with fresh butter; a three-double linnen cloath; and a roler having four ends.

Fig. II. the ſtar, ſhews where the coronal and ſagittal ſutures meet; which meetings being covered with the hair, a thick skin and a membrane, the Chyrurgian can hardly find. For this moſt acurate invention, the Chyrurgians, both old and new, uſed divers waies; all which *Fabritius ab Aquapendente* recites, *de operationibus Chyrurg. fo.* 6. I, reducing into one the manners uſed by the chief of the Arabians, *Avicenna*; and by *Celſus* chief of the Latines, do ſearch out the conjunction of the ſutures thus:

thus: I draw a thread from the middle of one ear, to the middle of the other, and again I draw another from the tip of the noſe, to the crown of the head (Fig. III.) where theſe threads croſs one the other, there is the place for the fontanels; which shaving off the hair, muſt be marked with writing ink, as the Figure IV. shews.

Fig. V. teacheth the way of the operation, where the Chyrurgian holds the inſtrument in his left hand, (*a*) not at all hot, wherewith he forcibly preſſeth the skin marked with ink, for the reaſons I alledged before, Table I. Figure I. but in his right hand he holds the inſtrument (*b*) very red hot, put into the pipe (*a*) which becauſe it hath alſo a cutting force, if it come to the skul, it muſt be turned about. And it is turned about, not only that there may be paſſage for the matter to come forth by the pores of the bone; but alſo that the *Pericranium* may feel no inflammation; which it will eaſily do, if the inſtrument be not turned about.

Fig. VI. is a band with four ends; whoſe two ends before (*h. i.*) are knit under the chin; but the hinder ends (*k. l.*) are to be ſewed behind the head with a thread; leſt the knot, whileſt the ſick lieth aſleep on his back, might wake him by preſſing that part; and watchings oftentimes are the cauſe of an inflammation of the *Peticranium*, which proves to be mortal.

Fig. VII. here you ſee a convenient uſe and binding of the band, to hold on the medicaments which are applied to the fontanel, burnt in where the ſutures meet. But to what end ſerves that great furniture of the firſt Figure, if two inſtruments only be ſufficient for this operation? This ſerves to deceive the Patient; I cauſe a low ſeat with joints to be brought, ſuch as Barbers uſe in their shops, turning the one ſide, either the right ſide or the left, toward the light and the windows, but the back toward the dore, and that for this reaſon; leſt the ſick ſitting in this Chair, ſhould perceive the red hot iron, when it is brought out of the kitchin. The Patient being rightly ſet down, I draw forth, into a wooden dish ſet upon the Table, the inſtruments (*c. d. e.*) but I keep the iron tool (*a*) cloſe in my bag. The ſervant ſecretly delivers the inſtrument (*b*) to the Patient's maid; and gives her order to make it very red hot, and not to bring it, untill she be commanded to bring ſome live coles. Theſe things being done, the ſervant doth shave away

ſo

ſo much hair of the head as is needfull, Figure IV. but I prepare the band, Figure VI. and a double linnen cloath (*f* Fig. I.) and other things neceſſary to be uſed after the operation; in the mean while I diſcourſe with the Patient, concerning the excellency of this Chyrurgical operation (and if he be deſirous to learn it, as it often falls out) I ſpeak of the qualities of the inſtruments, and of other things which may keep up his mind from fearing the fire. Theſe things being provided, I ſpeak to my ſervant openly, that he ſhould hold his temples firm, with both his hands (ſee Table XXXI. Fig. II.) that I, ſtanding behind the Patient's back, may find the joining of the ſutures with the threads (Figure III.) and having found it (Fig. IV.) I may mark it with ink. Whileſt the place is marked, I call the maid to bring the fire-pan, and ſet it on the Table; and that she ſhall only moderately warm one of the iron inſtruments (*c. d. e.*) and I ſecretly receive from the maid, paſſing by me and coming to the Table, the iron inſtrument (*b*) very red hot; and ſo the Patient ſcarce taking notice of it (for he beleeves that the iron inſtrument, neceſſary to burn with, is not yet hot) I make a fontanel in the coronal ſuture. This way of deceit muſt be obſerved alſo, in making other fontanels, to hide the cautery, and to take off the fear of the fire.

Fig. VIII. is the furniture to dilate the wounds of the head, and to pare away the chinks, which do not paſs through both Tables.

Fig. IX. in wounds of the head, with the skull hurt, firſt of all the hair muſt be ſhaved off, and the head muſt be moiſtned with oil of Roſes. Yet with this caution, that neither the hair nor the oil go into the wound; for that is ill for any wounds of the head. Then let the wound be dilated in the form of a croſs, unleſs the ſutures hinder it: The next day after that it is dilated, let the place for the inſtrument be made black with writing ink.

Fig. X. The third day after inciſion, let the blackneſs made with ink be pared away with paring inſtruments. Note, that in ſhaving about the wound, the lips of the wound muſt be covered with linnen cloaths to defend them; as when you ſet on the Trepan, Table XXXI. Fig. V.

Fig. XI. ſhews the ſmall chink, in the middle of the place ſhaved away, which muſt yet be taken off with paring tools.

If

TABVLA XXXI
Fig. I
II
III
V
IV
VI
VII
VIII
X
IX
B C E D
A
B C E D

If the Chyrurgian be certain that the chink doth not penetrate, he doth not fall to paring again, but he leaves the work to nature; which ſometimes is wont to caſt off a ſcale with the chink (*n*) but if there be any ſuſpicion that this chink doth penetrate, he muſt pare that away, that it may not be ſeen at all, and the skull may in all places appear equal.

The XXXI Table.

Of the Furniture, and the manner how to cut the wounds of the head triangularly; and to Trepan the skul with Trepans; and to bind the head with a band called Cancer.

FIG. I. is the furniture or inſtruments neceſſary to dilate the wounds of the head, and to perforate the broken skul.

Fig. II. shews the dilating of the wound triangularly with a knife. Fig. I. (*a*) *for here the coronal ſuture hinders to cut it croſs-waies, and ſo doth the temporal muſcle: the ſection begins from the forehead, for if it be made otherwiſe the fibraes of the temporal muſcle would be cut overthwart.* The triangle is ſought on the right ſide of the fiſſure of the skul, whereby the Trepan, which the coronal ſuture, on the left ſide, would not ſuffer to be ſet on, may be uſed: the head is held with mens hands, and is bolſtred up with a pillow that it may ſtand firm.

Fig. III. the wound is ſeen dilated triangularly, and the skul is uncovered with a narrow chink in it; by which the matter, which deſcends to the membranes, cannot be voided forth. Wherefore at the ſide of the chink, noted with a ſtar, the skul muſt be opened with a Trepan, to let the matter out.

He that goes about to Trepan the skul; muſt come to the Patient with the inſtruments printed Fig. I. of this Table; namely, provided with a ſmall piercer; a male Trepan (*b*) and two females (*c d*) Probes (*e f*) a Puller (*h*) and a Lenticular inſtrument with a Levitor (*i*:) then he muſt prepare thoſe things that are laid in the diſh, Fig. IV; and the band Fig. X.

Fig. IV. shews a glaſs full of Roſe-water, wherein the linnen cloaths are moiſtned, which muſt be laid to the lips of the wounds: (*b*) is a little piece of red ſilk, wet in oil of Roſes; hanged by a thread (*c*) the little ball (*d*) of dry linnen rags, to cover the hole

hole that muſt be made with the Trepan, that the matter of the wound may not deſcend to the membranes of the brain; (*eee*) ſhew the little balls that muſt be applied to the naked ſkull; for dry things are proper for dry things: alſo (*ff*) ſhew the little balls beſmeared with a digeſtive (*g*) to digeſt the lips of the wound; the ſimple linament ſpread upon a linnen cloath (*h*;) and a linnen cloath three or four double (*i*;) the little bone (*k*) is thruſt with the iron pin (*l*) out of the female Trepan.

Fig. V. things to be provided being provided; the head being ſupported, and the lips defended with linnen cloaths, the Chyrurgian ſhall ſet on the Trepan with a pin, and marked with a ſtar, Figure III. wherewith he ſhall begin to Trepan the ſkul; which he muſt end with females. Here *Porralius* admoniſheth young Chyrurgians, ſince according to *Hippocrates Aph.* 1. *Sect.* 1. experience is dangerous, that they ſhould often exerciſe themſelves in Trepanning the ſkuls of dead men; putting under the ſkul a piece of white paper, to repreſent the *dura mater.*

Fig. VI. ſhews the ſkull cut out with Trepans, at the ſide of the chink.

Fig. VII. the brims of the hole are made even with a Lenticular knife.

Fig. VIII. ſhews a ſmall linnen rag, wet with oil, how it is let down upon the membrane; being faſtned with a thread that it may be drawn forth again; when that is drawn out, one that is fresh muſt conſtantly ſupply the place of it.

Fig. IX. is the band called Cancer, which for wounds of the head is the beſt of all to contain them, and alſo the moſt commodious; broad in the middle (A) and on both ſides having four ends; whereof two begin from the temples, and end in the hinder part of the head, where they muſt be ſewed (D;) two ariſe from the hinder part of the head, and are bound together on the fore part of the head (B;) two are turned behind the ears (C,) and as many before them (E) and are faſtned under the chin together.

Fig. X. is the head bound about with the band called Cancer. 1. The ends D are united behind the head. 2. C under the chin. 3. D on the fore-part, above the fore-head. 4. E under the chin. Yet let the head be bound delicately, ſo that the band may hold faſt, but not preſs it.

The

The XXXII Table.

Of the way to raiſe, with Levitors, the skul preſſed down; to break off, with Pincers, the ſmall bones that prick the membranes of the brain; cutting forth, with a turning ſaw, the diſtances of the holes made with the Trepans; and of the general cure of the head.

Fig. I. are the depreſſions of the skul; when, by reaſon of the narrowneſs of the chink, they cannot be raiſed with Levitors, Table II. Figure VII. and Table III. Figure II, III. B. and IV; then the skul is Trepand twice, or as oft as need is, with a Trepan upon the ſound ſide of the chink; and after that the diſtances of theſe holes are cut out with a turning ſaw, that the Levitor, that is requiſite, may be put under the skul.

Fig. II. a depreſſion of the skul is raiſed with the piercer of the Triploides, Table III. Fig. III. A.

Fig. III, IV and V. shews the uſe of the Pincers, wherewih the ſmall bones are partly cut off, and partly broken off, which may prick the membranes of the brain. See underneath the obſervations of *Martin Kunzius*, and of *Michael Schnerderus*,

Fig VI. the keeper of the membrane is put under the ſmall bone, which muſt be cut off with the Pincers; leſt the membranes that cover the brain, should be hurt by them.

Fig. VII. the skul preſſed down, is raiſed with *Paræus* his Levitor.

Fig VIII. if it fall out ſo that the Chyrurgian hath not the aforelaid Pincers ready with him, a ſmall bone is ſafely laid hold on by this pair of Pincers alſo, and is cut off; firſt, putting down under it, the keeper of the membranes, as you ſee Figure V.

Fig. IX. When I was not yet learned how to uſe the turning ſaw, I was wont to cut away, and take out the ſpaces between two holes with this ſaw.

Fig. X. When the diſtance of the holes is cut forth, all kind of Levitors may be let down to lift up the skul; yet that is choſen which is moſt convenient. To this Table alſo belongs Figure I. of the following Table; which shews the uſe of the Piercer

TABVLA XXXII
I
II
III
IV
V
VI
VII
VIII
IX
X

Piercer wherewith a prick, that doth not penetrate the skul, is taken away.

But that the Figures, of this and of the following Table, may be better underſtood, which treat of the wounds of the head; I will briefly, in order, recollect the uſe of them, running over the diſeaſes of diſſolved unity in the skul, the membranes and the brain.

Of the moſt ſimple Wound of the head.

THe wounds of the head with only ſimple inciſion of the skin to the *Pericranium*, yet without any detriment to that, and wanting all ſymptoms, are either united and ſo kept, either by ſtitching or ſome glutinating medicament; or are cured by being filled up with flesh. The latter way of curing ſeems to be ſafer than the former, becauſe the skin being cut quite through, it is almoſt impoſſible but that the *Pericranium* muſt be hurt alſo.

Of a Wound of the head, with hurt done to the Pericranium; *with alteration of the skul, and the ſeat of the inſtrument.*

OTher wounds with hurt done to the *Pericranium*, or the ſeat of the inſtrument, muſt be cured by ingendring of flesh. They cannot ſafely be ſewed, nor yet glewed together, for three reaſons, which *Hier. Fabrit. ab Aquapend. lib. 2. Pentateuch. cap. 16.* alledgeth; nor can theſe, that manual operations, if they were needfull, may be performed without pain. When therefore, the firſt hour one is hurt, the Chyrurgian is called, to one wounded only by inciſion of the *Pericranium*; he ſhall preſently dilate the wound with little balls made of hemp hards, and wet in whites of Eggs beaten together, that ſo the flux of blood may be ſtopped, and alſo the lips of the wound may be kept aſunder: alſo let him anoint the parts, that are next, with aſtringent oils made hot, to prevent inflammation; and let him apply convenient ligature, that which is called Cancer (Table XXXI. Fig. IX, X.) with a three double linnen cloath, that the parts hurt, be not more hurt by the ambient air, which is an enemy to wounds of the head: or that the medicaments laid on upon the wound may not fall off: Concerning the band note here, that the ends of it D, to be faſtned behind the head, muſt be ſewed; becauſe otherwiſe the not will do much harm, and make pain with watching.

The ſecond day after the hurt done, let the Chyrurgian take off the hards, and all other things that are accidental; and the blood being ſtopt, and the hair ſhaved away round about, he ſhal dreſs the wound with lint made up into little pellets, and anointed with a digeſtive medicament; applying upon it *Emplaſtrum Diapalma* with a hole cut in it with a pair of cizers, and ſpread over with unguent *linimenti ſimplicis*; with a Plaget of three double linnen cloath, and a roler, not neglecting alſo the anointings ſpoken of before; and thus we muſt proceed till the quitter appear to be good, which is white and not ſtinking.

When that appears, to cleanſe the wound; he muſt daily mingle ſome detergent medicament with the digeſtive, untill it be throughly well mundified, continuing the uſe of the three double cloath, and of the band with unctions. When the wound is cleanſed from filth, he muſt labour to ingender flesh; wherefore he muſt lay upon the lips of it a ſarcotick ointment ſpread upon dry lint; and not oil of Roſes as ſome ignorant Barbers uſe to do; upon that he muſt lay only the Cerat *Diapalma*, then a three double cloath, wet in red wine, or ſome aſtringent decoction, and preſſed forth again, and next the band about it. Theſe muſt be uſed untill ſuch time as flesh is perfectly generated. But if the bare bone be but only altered by the ambient air, (if it lie but open to it for two hours) or if it alſo grow black; (if it lie longer open to it) then we muſt ſcrape off all round about, either till the colour be changed, or till blood comes forth of it. Namely, when the quitter appears to be good, and the wound to be cleanſed. If the Chyrurgian obſerve this time, he ſhall find that the bone which was but once ſcraped, and cephatick powders ſtrewed upon it, and dreſſed with dry lint, will be covered with flesh the next day. For *Iacob Berengarius Carpenſis*, is not to be heard, who, *lib. de fractur. cran, cap.* 42. commands that every day we ſhould pare away, with a raſp, what is ſuperficially altered of the bone; becauſe that paring away, performed at the time ſpoken of, is ſufficient; but if it be done before that time, it muſt be often repeated, and that not without danger of the Patient; for by this reaſon the paring inſtrument will, by degrees, come to the Diplois. They that are more fearfull, leave the bone altered to Natures ſcaling of it, but they prolong the cure.

The wound filled with flesh, muſt at laſt be covered with a cica-

cicatrize, either with dry linaments only, or elſe by laying on alſo *ceratum divinum.* By this way of curing, which is both the moſt ſafe and moſt certain, yet univerſals being premiſed, and the regiment of things not natural being well obſerved, I have recovered multitudes of Patients; of which number there is yet alive *Iohan. Petrus Wils* of *Vlma*, who, *Anno* 1643. on the 13. day of *March*, beſides ſome fractures of the skul, received three wounds in the *Pericranium* with clubs; *D. Iohan. Rudolph. Straus* of *Kafenburg*, Steward to the moſt generous Count of *Walnſtein*, whoſe *Pericranium* I found cut athwart near to the coronal ſuture. *Anno* 1645. *Auguſt* the 13. day, *Melch. Frick* a Fuller of *Vlma*, was wounded the very ſame year and day: *Iohn Bucher* a Country man of *Achſtet*, who, near to the temporal muſcle, *Anno* 1642, on the 13. day of *March*, received a wound on the *Pericranium*: And *Erhardus Vilſeker* of *Banberg*, Steward of the Lord Governour *N. Sals*, who, *Anno* 1645. in *Iune*, had a wound on his head, was by me at length cured, where he was with the Provoſt Martial at *Vlma*, *Matthæus Stalzlinus* waiting upon me to aſſiſt me.

The ſeat of the inſtrument appearing, muſt be preſently pared away with a knife, as ſoon as the wound is dilated: after that the wound dilated, and the skul pared away with paring tools, muſt be dreſſed with convenient medicaments.

A wound of the head with the skul made bare, and a rift as ſmall as a hair not penetrating.

IF that a prudent Chyrurgian be called to cure a short wound of the head, with the skul laid bare, he muſt preſently shave away the hairs of the head, moiſtned with common oil; and he muſt moſt diligently ſearch how the bone doth, either with a Probe or with his ſight, or with both together; and if he find a fracture or a chink, or by the antecedent and preſent ſymptoms he have a ſuſpicion of a fracture, or elſe doubt whether there be a fracture or not, he ſhall immediately dilate the wound, contrary to the common cuſtom of Barbers, with a ſtreight pen knife (Table II. Figure II.) croſs waies (Table XXIX. Figure IX) or elſe after the form of a Triangle (Table XXX. Figure II.) namely where the ſutures and muſcles, eſpecially the temporal muſcles, will not ſuffer us to make a croſs; that the bone, being laid naked, may admit the neceſſary manual operations, by paring tools or Trepans, ſafely and without

any hurt to the ſenſible parts, But yet if paring or trepanning of the skul be needfull, and may be performed without any dilating of the wound by an iron inſtrument, then we shall totally abſtain from ſection. The wound being artificially dilated, the Chyrurgian shall forthwith part the lips of it, and the *Pericranium* alſo with it, with the nails of his fore finger and thumb of his right hand, from the ſubſtance of the skul, and shall lay dry lint upon the bone, and shall fill up the reſt of the wound with balls made of hemp hards, wet in the white of Eggs, and ſtrewed over with aſtringent powder; not only to ſtop the blood, but alſo that the wound may not fall in, and that the next day it may lie wide open with no labour; upon it let him lay *Linimentum ſimplex*, ſpread upon a fine linnen cloath (that it may only comprehend the lips of the wound) and above this let him apply the Plaiſter or Cataplaſm of *Hippocrates* with a decent Ligature; namely, by that which is called the Cancer; and by anointing the parts that are near with aſtringent oils, to prevent inflammation.

The next day, the hards being taken off, the blood being ſtopped, and the wound being cleanſed from all unnatural things, let there be, with a pen, writing ink drawn upon the chink, by the Chyrurgian; and let him dreſs the skul with dry lint; but the lips of the wound being firſt anointed with ſome digeſtive, he muſt lay upon that *Linimentum ſimplex*, and then *Hippocrates* plaiſter, and the Ligature called Cancer, together with the aforeſaid anointing.

At the third viſitation, the wound being bound, and the Patient's ears, according to ſome mens advice, ſtopped with wool, and his head being well placed, and underpropt with a bolſter, he shall ſcrape off the chink which hath drunk in the writing ink, or rather printers ink (which *Iulius Cæſar Arantius comm. in Hippoc. de vulneribus capitis*, prefers before writing ink, by reaſon of the vitriol in it, which is biting) with raſping tools, Table XXX. Figure X. according to the length of it, beginning with the larger raſp; and by degrees proceeding to one that is leſs, and ſo to one leſs than that, untill ſuch time as the chink be quite gone, and the bone under it appear white and ſound; which is a moſt certain and demonſtrative ſign, that the chink pared away did not penetrate the skul. When the Chyrurgian uſeth this operation, he shall often take away the duſt from the raſping inſtruments; and let him be carefull that he hurt not the skin or the *Pericranium* with them; which may be avoided, if the Patient's head lie firm

whileſt

whileſt he uſeth his operation, and the lips of the wound be all co-vered with ſmall linnen rags, Table XXXI. Figure V. Others do oftentimes wet their raſping tools in oil of Roſes, that they may run the eaſier. But becauſe this anointing is wont to dull the edges of the raſps, I uſe to change them. When the bone is decently and ſufficiently pared, you muſt lay dry lint upon it (for when the skul is bare and pared, a digeſtive is not convenient, nor an unguent, nor any fat thing) and to the lips of the wound we muſt apply a digeſtive ſpread upon lint, and upon that *linimentum ſimplex*, the Cataplaſm of *Hippocrates*, and the band called Cancer, with the uſual anointing with oils that keep of defluxions.

When the quitter appears good, we muſt mingle ſome detergent with the digeſtive, untill the wound grow perfectly clean; when the wound is cleanſed, then we muſt ſtrew cephatick powders upon the pared bone, and we muſt apply dry lint to it; but to the lips *unguentum ſarcoticum*, with the cerat *Diapalma*, with a treble linnen cloath wet in wine of the decoction of corroboratives, and preſſed forth, and with a band, leaving out the oils. The wound being filled with flesh, muſt be brought to cicatrize by noted Epuloticks. After this manner was *Iohan. Rudolphus Straus* of *Kaſenburg* dreſſed and cured; and *Caſpar Wirth* a Miller of the Hoſpital at *Vima*, who both had a rift like a hair, that did not penetrate, near to the coronal future.

A wound of the head, with a fracture of the skul no bigger than a hair, that doth penetrate.

BUt when the Chyrurgian works with theſe raſps, to try the wound, and he finds a chink which penetrates the ſecond Table, he muſt not go about to take that away with his raſps (becauſe with them the membranes, which cover the brain, may eaſily be offended) but laying aſide all Chyrurgery, he ſhall proceed with driers, with which alone oftentimes the Patients are cured; nor is it to be feared, if we timely begin to pare away the skul, but that Nature may reſolve the matter (which doubtleſs deſcends in a ſmall quantity) to the *dura mater*; for after paring of the skul, the *dura mater* receives in nothing by the chink, which remains in the ſecond Table; becauſe the excrements of the wound, which are apt to run forth, are continually dried up by the dry lint.

Sometimes the bone pared and dreſſed with driers, will caſt off a ſcale, that the way for the quitter, collected about the membrane, may be open enough for it to come out. I obſerved this ſeparation in one *George Stuzzel*, who, *Anno* 1639. had a ſmall crack, like to a hair, on the right ſide of his fore-head, yet it penetrated through both Tables; after that the chink was ſcraped away as far as the inward Table, and a ſcale came off of it ſelf; he was moſt happily cured in the Hoſpital there.

But if great ſymptoms do accompany a crack in the ſecond Table, which ſhew that there is much matter collected between the *dura mater* and the skul; laying aſide the Raſps, the skull muſt be preſently bored through with the Trepan, according to the words of *Hippocrates text.* 2. *de vulneribus capitis.* When you have pared the bone with a raſp, if you find neceſſity to cut the skul open, you muſt cut it; and not ſuffer three daies to paſs before you do cut it, but within that time you muſt do it.

A Wound of the head, with an evident yet narrow crack in the skul.

WHen we are certain that the crack goes through, both by reaſon of the ſtroke, the quality of the inſtrument, and the accidents that come upon it; then truly, the Chyrurgian muſt try, with great diligence, and conſider whether the chink be wide enough for the matter to come forth, which ran down through it to the hard membrane of the brain, or not? If it be not broad enough, the Trepan muſt be ſet on. Wherefore, the Chyrurgian firſt of all muſt foreſhew the danger, that the prating of idle people may be prevented. For narrow fractures of the skul, have more danger than thoſe that are broader; for a narrow cleft hinders the matter to come forth. Then he ſhall preſently dilate the wound that is too narrow, either croſs waies or with three corners (as the place hurt will admit) with a knife, that he may come at the skul to do his operations there; he ſhall pull away the lips of the wound and the pannicle of the skull, with his nails, from the bone: which being performed, he ſhall lay to the bone dry lint; but to the lips of the wound, lint wet with deſiccatives, and then proceed with the reſt, as in the cures of wounds in the *Pericranium.*

The ſecond or, at moſt, the third day after the hurt perceived, (where the *dura mater* is pricked by ſome ſplint of the bone) the skul

ſkull muſt be opened with Trepans, whileſt the forces of the Patient yet remain; for after three daies, and ſo long as inflammation is preſent or near, the uſe of the Trepans is dangerous. Neither are they to be hearkned to, who, according to the opinion of *Paulus Lib.* 6o. *Cap.* 90. in Summer expect the ſeventh day, and in Winter the fourteenth; becauſe Trepanning, at that time, brings help too late; for the forces are then weak, and we may ſuſpect that the pannicles of the brain are already infected by the matter. Wherefore the Chyrurgian, ſo ſoon as he is called, ſhall make haſt (only, according to ſome mens opinion avoiding the full Moon, becauſe then the brain is augmented, and comes near to the skull; ſo that the Chyrurgian, who is not acquainted with Trepans called *Abaptiſtoi*, may eaſily hurt that with the membranes thereof) with his operation, (eſpecially where the membranes are pricked and preſſed) becauſe Impoſtumes ſoon follow thoſe things, and ill accidents (as *Guido de Cauliac* admonishes us concerning the wounds of the head) when things to be removed are removed out of the wound; the head being laid unmovable, and the lips of the wound being artificially covered with lint, Table XXXI. Figure V. (*that they may not take cold by the air that comes to them, or be offended by the touch of the inſtruments*) the skull muſt be opened with a Trepan near to the chink, Table XXXII. Figure III. in that part that is more declining (unleſs the future hinder it, which for certain reaſons muſt be avoided as much as may be) for the more eaſie coming forth of the matter collected upon the hard membrane. But firſt we muſt uſe the male Trepan, in the middle whereof there is a pin, and this muſt be duly turned about, untill ſuch time as it hath made ſuch a print upon the skul, *that the female Trepan may ſtand faſt upon it.* Then the male Trepan being taken off, the female Trepan muſt be fitted to the handle, which muſt be ſtrongly and equally turned about (*untill it come to the thin Table*) and it muſt be changed now and then, *leſt it ſhould grow too hot with often turning about.* New Practitioners find fault with dipping the Trepans in oil, which the Antients uſed, becauſe unctuous things are enemies to the bone, and dull the edge of the inſtrument. When the Trepan comes to the glaſſy Table, it muſt not only be preſſed more warily and gently, but it muſt be taken off, that we may conjecture how much remains of the bone yet to pierce through. Nor muſt *Glandorpius* be followed, who proceeds in piercing, untill ſuch time as the part cut forth cleaves to the Trepan; but if the bone almoſt cut forth begins to ſhake, the Chyrurgian muſt, with

the ſmalleſt and weakeſt Levitor of all, Table II. Figure VII. (putting that between the bone that ſhakes, and that which is firm) move it up and down, and pull it forth with the toothed end of the Pullers. *Note, that the operation muſt not be differed by reaſon of the blood that runs forth of the Diploïs, but muſt be warily haſtned.* For the blood, after terebration, and taking forth of the bone that is fallen down upon the membrane, muſt be gently wiped away with cotton wrapt about the ſpindle of the Probe; and the hole made with the Trepans, muſt be ſtopt with dry lint wrapt cloſe together, and that flux muſt preſently be ſtaied.

When the Trepanning is over, and the blood well ſtopped, the roughneſs of the hole muſt be made ſmooth with a lenticular inſtrument, Table XXXI. Figure VII. If one hole made with the Trepan ſeems not to be ſufficient, we muſt make another; as it ſhall appear afterwards in the Hiſtory of *Happelius*, *Hebichius*, and *Schneiderus*. Theſe things being rightly performed, we muſt let down, through the hole, a little ſilken red rag, upon the hard membrane; or elſe a white linnen rag, round as a globe, faſtned to a thread, (that it may be drawn out again) and dipped in compleat oil of Roſes made hot, Table XXXI. Figure IX. that it may turn the matter, which falls down, into quitter; and may defend the membranes, by reaſon of their motion, from being hurt by the bone. The linnen rag being put in, we muſt put into the hole a round pellet of dry lint, that the quitter bred in the wound, may not deſcend to the membrane of the brain; upon the naked bone we muſt lay dry lint, the lips of the wound being anointed with ſome digeſtive; and upon this we muſt lay *linimentum ſimplex* (that it may not ſtop in the quitter) with a hole in the middle of it; then a cataplaſm, and a band, with anointing the parts next to the wound, with repelling oils to hinder inflammation. This way of cure muſt be exactly obſerved, untill all fear of inflammation be paſt; and the Patient muſt be admoniſhed, that he muſt daily, when the wound is bound up, promote the coming forth of the matter, that is run to the membranes of the brain, by breathing out at his noſe, keeping his mouth ſhut.

When good quitter appears upon the hard membrane; in the place of oil of Roſes, *mel roſatum colatum* muſt be let down upon the membrane, with a linnen rag tied to a thread; upon the bone muſt be laied dry lint, and upon the lips lint wet with ſome deter-

detergent digeſtive, to mundifie the hard membrane and the wound, alſo outwardly, we muſt continue the uſe of *Linimentum ſimplex*, *Hippocrates* plaiſter, a band, and aſtringent oils.

If the wound be clean, and the membrane is ſeen to be cleanſed from filth, *omitting the ſilk or linnen rag, and honey of Roſes*, we muſt put into the hole, a round pellet of dry lint; and the naked bone muſt be ſtrewed with cephatick powder; alſo to the bone we muſt lay dry lint, and to the lips lint anointed with ſome ſarcotick unguent, and above theſe *ceratum Diapalma*, with a treble linnen cloath, wet in the decoction of red wine, with capital remedies, and preſſed forth again, and they muſt be faſtned with convenient Ligature. With theſe we muſt proceed, untill the bone be covered with good flesh, and the wound be filled up with it. Laſt of all a cicatrize muſt be made with Epuloticks. This way of cure I found to be the beſt in *George Seiz*, a Country-man of *Idelhuſan*, concerning whom ſee *Gregory Horſtius* his Chyrurgical Obſervation XX.

A wound of the head, with a fiſſure in the ſkul, that penetrates and gapes wide enough.

IF the crack gape, that the matter may freely come forth of it, we need not Trepan the ſkul, or dilate the wound with an inciſion knife, which is only appointed for this reaſon. And therefore *Chalmetæus* doth rightly judge that thoſe deſerve to be cenſured and reprehended, who not only in a ſmall fiſſure of the ſkul (though it do not penetrate) but alſo in a great fiſſure are very bold to ſet on the Trepan; by which great errour the cure is prolonged very much; *to the great damage of the Patient, and loſs of the Chyrurgian's reputation.* I am not certain whether theſe inconveniences ought to be aſcribed to the ignorance or covetouſneſs of the Chyrurgian. When therefore a great fiſſure admits not of the Trepan, what muſt a cordial and prudent Chyrurgian do in ſuch a caſe? Let him follow exactly the cure of a narrow fiſſure, after the neceſſary uſe of the Trepans (*yet omitting the Trepan as needleſs and hurtfull*) let him let down a long linnen rag upon the hard membrane, anſwerable to the magnitude of the fiſſure, and tied to a thread, and wet in oil of Roſes, *&c.* *Iohn Anwander*, a Lighter-man of *Kirchdorf*, who is yet

yet living, will commend this way of cure, in whoſe left ſide of the forepart of his head (*Anno* 1633. in *January*) I found a fiſſure (*it was ſo broad that I could eaſily put in my finger next to the greateſt finger*) with a huge inflammation of the *dura mater*, which, by premiſing univerſals, and by the diligent application of oil of Roſes, applied warm with a ſilken rag, and of *Hippocrates* Cataplaſm, was taken away in three daies.

A wound of the head where the dura mater *is hurt alſo.*

LIkewiſe upon a wound of the *dura mater*, with a crack in the skull that is wide enough, we muſt let down a long ſilken rag, tied to a thread, and wet with oil of Roſes: when good quitter appears, a new linnen rag muſt be anointed with *mel roſarum*, and muſt be let down upon the membrane, which being cleanſed, the wound of it muſt be incarnated by *unguentum de betonica*, melted and poured in warm at the hole. *But the bone, and the outward wound, muſt be dreſſed as we ſaid before for a fiſſure of the skull that penetrates, and gapes wide enough.* But when the fiſſure is narrow, that topicals cannot be applied to the *dura mater* wounded, then the wound muſt be duly dilated with an inciſion knife, and the skull muſt be Trepan'd; and all other things obſerved, as I ſpeak before for the cure of a narrow chink.

A wound of the head when the pia mater *is wounded, and the ſubſtance of the brain.*

THe *pia mater* can hardly be hurt, and the brain that is under it not be hurt alſo. *Wherefore we muſt forbear the uſe of all unctions and hot remedies, by reaſon whereof the ſubſtance of the brain will eaſily corrupt, as Authors write truly*: Some alſo reject *mel roſarum*, by reaſon of its acrimony and heat; and for that they uſe ſyrup of Roſes. *Yet for theſe kind of wounds, I have uſed both ſyrup and honey of Roſes often; but never found any hurt come thereby.* But before all other remedies, I cannot ſufficiently commend that unguent which *Hierom. Fabritius ab Aquapendente* deſcribes *lib.* 2. of his *Pentateuch. cap.* 20. and he oftentimes applied it with happy

happy ſucceſs: I alſo tried the vertue of it in *Michael Schneiderus*, of whom afterwards there is a ſingular obſervation. *We muſt look to the vvound and the crack, as I admoniſhed concerning a vvound of the* dura mater.

A wound of the temporal muſcle, with the hurt of the Pericranium *and the veſſels.*

OF all the wounds of the head, thoſe are the moſt dangerous where the temporal muſcles are hurt; for they are covered, on the outſide, with the *Pericranium*, which paſſeth above them and wraps them in; but on the inſide of them they are naked, and lie upon the naked bone immediately. Wherefore, *vve muſt obſerve very vvell*, if the *Pericranium* (which wraps in the ſaid muſcles, and hath its original from the internal thick membrane of the brain, by the ſutures of the skul) be but lightly inflamed; for this will preſently cauſe the thick and thin membranes, and the brain under them to conſent with it: Alſo the wounds of the temporal muſcles are dangerous, by reaſon of the flux of blood from the arteries which are cut, and which the moſt choice aſtringent can hardly ſtop. In the like caſe I never found any thing better than *Galen's* plaiſter (*the commendations vvhereof you ſhall find in* Zacutus Luſitanus, *Prax. Med. admirand. lib.* 1. *obſerv.* 85.) made of Aloes, Frankincenſe, and the flue of a Hare well beaten together, and mingled with the white of an Egg; with this the wound is filled to ſtop the Arteries: If by this moſt precious remedy the blood ſhould not be ſtopped, which boils forth exceedingly by reaſon of drunkenneſs or anger, then four grains of *ſperniolum compoſitum Crollii* are given, with very good ſucceſs; and about the neck a plaiſter is applied (whereof *Johnſtonus* makes mention in his *Idea Menicinæ cap. de hæmorag. nariū*) made of Potters clay compounded with the moſt ſharp vineger of Roſes, and laid upon a band that is four fingers breadth, and renevved as often as it is dried, untill ſuch time as the flux of blood, *commonly vvithin half an hour, or elſe ſooner*, doth ſtop wonderfully. I thought it fit to mention theſe three remedies by the way, becauſe they are not only wonderfully forcible to ſtop the flux of blood from the temples, but it doth infallibly ſtop a deſperate bleeding at the noſe, or of the gums, which follows

follows a violent pulling forth of the teeth, as *Iohan. Iacobus Mayer* a Weaver of *Vlma*, and *Gallus Breittinger* a Country man and Huckſter at *Dornenſtat*, can teſtifie. The powder taken at the mouth, ſtops the boiling forth of the blood. The plaiſter laid upon the wound, joins together the veſſels that are cut; and that which is applied to the neck, hinders the blood to run to the head. This wound (as alſo deeper wounds, yet without any hurt to the skull) when the blood is ſtopt, by the firſt intention muſt not be cured; but contrary to *Veſalius* muſt be filled with flesh, and after that brought to cicatrize; taking eſpecial care that inflammation come not upon it, which muſt be kept away, and driven from it, by *Hippocrates* plaiſter.

A ſuperficial wound of the temporal muſcle.

FIrſt the blood muſt be ſtopped, with hards wet in the whites of Eggs, and ſtrewed over with *Galen's* aſtringent powder.

The next day, the hards being taken off, the lips of the wound are to be brought to unite together, with linnen rags ſpread with cerate *Diapalma*, and laid on croſswiſe, and the parts about muſt be anointed with oil of Roſes, to hinder inflammation. Alſo upon theſe plaiſters of linnen, that they may not fall off, a Medicament muſt be put which hath the force to repel humours (as is *linimentum ſimplex*, or *album coctum*) and then the band called Cancer.

A Wound of the temporall muſcle, with a narrow chink of the ſkull.

BUt when the skull is cracked under the temporal muſcle, it is not alwaies convenient to incarnate; but the quantity of the chink muſt be conſidered, whether it be broad, narrow, or like a hair? If the rift be like a hair, and the wound be narrow, then it muſt be dilated with little pellets made with ſponge, as need is, if it be poſſible; but if it be not to be done, the skin muſt be cut with an inciſion knife, as far as the skull bone; *yet warily that the veſſels, nor the fibraes of the muſcles be cut a croſs.* If therefore the Chyrurgian muſt dilate a wound in the temples, where there is a cleft like a hair on the skull, let him preſently foreſhew inflammation and convulſion of the oppoſite part (then let him make inciſion according

to

to the ſtreightneſs of the fibraes (*having firſt, in vain, tried to make dilatation by a ſponge*) leſt the aforeſaid accidents, if they chance to happen, may be aſcribed to the artificial dilatation of the wound. Which Prognoſtick, eſpecially in Germany, where Chyrurgical operations are not ſo common as they are in Italy and France, muſt be diligently obſerved Wherefore the wound being dilated, according as the fibraes run, and the muſculous flesh parted from the bone, and the rift diligently raſped, the Chyrurgian muſt proceed with the reſt, *as I ſaid before in the cure of a wound with a narrow, and hair like fiſſure.*

A wound of the temporal muſcle, with a crack in the skul that is wide enough.

WHen the wound of the skull gapes ſufficiently under the temporal muſcle, that the matter, fallen down upon the *dura mater*, may be ſufficiently voided; *then neither muſt the wound be dilated with an inciſion knife, nor muſt the crack be ſcraped away with raſping tools, nor muſt the skul be Trepan'd by the ſide of the crack*: For theſe operations (for the reaſons alledged before, concerning a great fiſſure) are not to be allowed in a great crack.

A Contuſion of the head, with the rending of the skin, and the skul thruſt in, with the ſuſpicion of ſome crack there.

IT is cured with admirable ſucceſs, with the skins of beaſts new killed, eſpecially of a dog or mouſe; which being applied whileſt they are yet hot, and left on for twenty four hours, do wonderfully diſſolve them. If the contuſion be not wholly diſcuſſed with one skin, you muſt lay on another. But becauſe every man cannot flea a dog, I alwaies choſe a lamb skin, which may be got almoſt alwaies, and is as powerfull to digeſt as any other.

By this one and moſt expert remedy (for it never deceived me) I cured, beſides many boys and young men, a Carpenter's girl four years old, which by reaſon of a fall from a high place, had a great contuſion on the fore-part of her head, which a certain Chyrurgian would have opened with a raſour, unleſs I, being join'd with him, had diſſwaded him from opening it, out of *Hippocrates ſect. 1: aph. 7.*

aph. 7. wherein he plainly teacheth, that no affection requires Chyrurgery, unleſs medicaments were firſt, in vain, applied to it. When therefore there were no ſymptoms preſent to cauſe inciſion, nor any topical remedy was yet applied in vain, he neglecting manual operation, laied on a lambs skin, and had the wonderfull trial of it (not only on this girl, but afterwards often on people of years) and he oftentimes gave me great thanks for my advice and aſſiſtance. *Wherefore I exhort young Chyrurgians, that they ſhall never open contuſions or other tumours, unleſs they find them to refuſe help by topicals.*

A ſimple depreſſion of the skul in boys, where the skin is whole above.

SOmetimes the skul is preſſed down, only by reaſon of contuſions, and the skin is whole above, nor is there any fiſſure in the skul; ſometimes there is a fiſſure alone, and ſometimes a depreſſion with a fiſſure. A depreſſion without a fracture, happens only to children; but oftentimes, in thoſe of years, there falls out a fiſſure and a depreſſion together.

The skull preſſed down in children without a fracture, and where the covers are not hurt, ſo that thoſe that touch or look upon it, can perceive a ſmall pit (and which no ill ſymptoms follow) *Paræus lib.* 9. *cap.* 3. a cupping glaſs that is ordinary, will excellently well reduce into the proper place. Our moſt ingenious *Hildanus*, for that purpoſe, invented two helps; namely, a horn cup, and a plaiſter; and if theſe cannot prevail, he thinks we muſt proceed to cutting of the skin, and raiſing of the bone, by the piercer, upon his Triploides, *Cent.* 2. *Obſerv.* 5. Yet theſe two operations ſeem to be neither neceſſary nor fruitfull. *They are not neceſſary*; for ſuch depreſſions in children, that preſs upon the brain and the ventricles of it, that the animal ſpirits cannot be made; and being made, cannot be diſtributed into the whole body; are incurable. *They are not profitable*; becauſe firſt, according to *Hippocrates*, ſimple wounds of the head, and where the skin is only cut, make work for the Chyrurgian, and bring danger to the Patients; and without doubt that work and danger will be increaſed, when beſides the skin, the *Pericranium* alſo, and the bone are cut of ſet purpoſe: And ſecondly, when the Levitor is faſtned upon the center of the depreſſion, *the pit in the skul is eaſily made greater.* And thirdly, when

when the ſcrew muſt be faſtned upon the skul, which is yet tender and ſoft as far as the Diplois, with force; truly it is to be feared (becauſe the Levitor of the ſcrew of the Triploides, is not the ſame with Abaptiſton) leſt it should paſs through the innermoſt Table of the skull, and with the point hurt the thick membrane: And fourthly. becauſe the tender bone is expoſed to the air, whence it grows black, which is a ſign of corruption; which corruption, if it be left to nature to make ſeparation of it, oftentimes creeps to the inward parts, ſo that it will require a dangerous ſcraping of it off with raſps, or cutting out with Trepans; but manual operation being neglected, the cure of the wound, *with danger to the Patient*, is prolonged. Yet they that reſolve, with raſping tools, to ſcrape away the skul bone ſuperficially corrupted, muſt expect that the pit shall grow greater. *Wherefore a prudent Chyrurgian muſt rather omit all manual operation, when he cannot do any good thereby, than to lay an infamy on the rational adminiſtration on the Art of Chyrurgery.*

I being convinced with theſe reaſons, where childrens skuls are preſſed down without any rift, or cruel accidents, uſe to abſtain from all manual operation; and being confirmed by frequent experience, I cauſe the hair to be shaved off about the depreſſion. and I apply a hot lamb skin, with convenient ligature of the band called Cancer, anointing the parts about it, eſpecially the temples and the neck, with aſtringent oils, to hinder the flux of humours to it, and to prevent inflammation. If at the firſt application the skin do not conſume the tumour, I lay on one more, leaving that on again a natural day. When the tumour is diſcuſſed, *if the pit is found, by touching, to be ſmall*, and there are no great ſymptoms preſent, which may portend any hurt of the parts under the skul, I put under the lamb skin, the *ceratum diapalmæ* of *Galen*, ſpread upon a broad linnen cloath, to coroborate the part affected. That this way of cure is the ſafeſt, thoſe Chyrurgians will bear me witneſs, who have been often my aſſiſtants in the like caſes; and amongſt the chief at *Vlma*, are the moſt experienced before others, *George Redlin*, and *Nicolas Reutte*, whom I thought to nominate for to teſtifie the ſame. Alſo young Chyrurgians shall find how, with medicaments ſafely, and no great pains, they may cure great blows upon the skull, in *Iulius Cæſar Arantius*, at the end of his moſt learned Commentary upon *Hippocrates* his book *De vulneribus capitis*, &c.

A Contuſion of the head with a depreſſion, but without any fiſſure in the skul, where the skin is whole in people of years.

IN people of years pits are moſt ſeldom found, under the whole skin, upon the skul, (namely, in thoſe only who have a very ſoft skull by nature) but yet never without a fiſſure; for if, after inciſion made upon the skin, there appears no chink upon the outward Table of the skul, it is to be feared that the inward Table is crackt; whereby the matter can fall down upon the brain, but cannot come forth again the ſame way. *Anno* 1632. I obſerved ſuch a fracture, at *Vlma*, in a Souldier of *Sweden*, who by reaſon of a depreſſion of his skul, died the ſecond day after. I, being deſirous to know what was the cauſe of his ſo ſudden death, did with a ſaw divide his skull; and I found the inward Table not only crackt, but alſo a little ſplint of a bone (which doubtleſs did continually prick the membranes of the brain) that was come from it, and yet the outward Table of the skull was whole. Wherefore, as often as in the heads of men grown up, ſuch a pit is ſeen, it is a moſt certain thing that the skull is cleft; for unleſs the skul were cleft. ſaith *Hippocrates*, the middle could not ſink down. Yet ſuppoſing, and not granting that there may be a depreſſion of a skull more dry, and without a cleft, that muſt not be left only to Natures work (as *Fælix Wurts* commands) but the skin muſt preſently be cut with an inciſion knife, either croſs waies, or elſe triangularly; the *Pericranium* muſt be parted from the skull, and the gaping wound muſt be kept with pellets open; not only that the Chirurgian may be more certain whether the skull be cleft; but alſo that if there be a chink with the depreſſion (which is very much to be feared) a Levitor, that is a convenient inſtrument, may be made uſe of.

The next day after the inciſion of the skin, as far as the skull (*if no chink can be ſeen in the outward Table, nor by no end of the* Probe *with a knot can be found out, nor that we ſuſpect any fracture in the inward* Table *of the skull, by reaſon of ſymptoms, this being whole*) we muſt take the triangular part of the Trefine, noted with a ſtar (Table III. Figure I.) wherewith we muſt gently bore the skull in the center of the depreſſion, *yet not beyond the outward* Table. Having made a hole with the Trefine, the Piercer of the Triploides muſt be faſtned on, and muſt be ſo long turned about by means of

of the ſcrew above, untill it take a little hold of the inward Table; then the skull, preſſed down, muſt be raiſed up perpendicularly, by turning the lower ſcrew of the Triploides back again. The skul being raiſed that was preſſed down, the inſtrument called Triploides muſt be removed; and the wound muſt be dreſſed as I ſhewed before, concerning wounds of the head with the skul laid bare, and for the ſeat of the inſtrument.

A Contuſion of the head in elder people, with a depreſſion of the skul, and a fracture of the inward Table, without any wound of the skin, or rift in the outward Table.

WHen the skin of the head is artificially cut, and the outward Table appears whole, yet ill ſymptoms accompany the depreſſion, it is not to be doubted but that the inward Table hath ſome hurt: Wherefore the skull muſt not be raiſed in the middle of the depreſſion, with a Piercer at the end of the Triploides; but muſt be opened with a Trepan on the ſide of the depreſſion, that the matter which is fallen down, by the ſecret fiſſure of the inward Table, upon the membranes of the brain, may find a place to come forth; and the skull that is fallen inwards may be raiſed up with the neceſſary help of the Levitor.

In contuſions of the head with a pit, in a man of years, the skin that is whole muſt be cut with a croſs, or elſe a triangle, or the wound there that is not broad enough for a Trepan, or a Levitor to be applied, muſt be dilated with an inciſion knife. But in contuſions without a pit, we muſt attempt nothing, nor by Trepans, nor by Levitors, but only a Lamb skin muſt be laied upon the contuſion, unleſs ſymptoms follow which ſhew the skul to be broken, and that there is need to uſe the Raſps or Trepans.

The depreſſion of the skul, with a broad rift in the middle of the depreſſion.

IF there be a chink apparently join'd with the depreſſion of the skull (which unleſs it be wide enough, requires the *Pericranium* to be pulled off from the skull) that is either in the middle of the depreſſion, or elſe it is on one ſide of it; that which is in the middle of the depreſſion, is either broad or narrow; if the crack

be broad, and the depreſſion not great, the skull muſt be raiſed with a Levitor. Table II. Figure VII. when the crack is broad, and the depreſſion is apparently greater than ordinary, the ſtronger Levitor muſt be let down, Table III. Figure II. but if with a broad crack the skull is far gone in, then the ſaid Levitors are to little purpoſe; wherefore the Levitor of the Triploides, Table III. Figure III. muſt be uſed.

The depreſſion of the skull, with a narrow crack in the middle of the depreſſion.

AT the bounds of the depreſſion, the skul muſt be cut forth with Trepans; then the diſtance between two holes muſt be taken away with my turning ſaw, Table V. (which is done without any fear of danger) not only that ſome of the ſaid Levitors may be put under the skull; but alſo that the ſmall bones, which ſometimes are parted from the inward Table of the skul, and prick the thick or thin membrane like thorns, may be taken forth with the puller.

The depreſſion of the skul, with a crack, vvhich is broad or narrovv at the ſide of the depreſſion.

THe crack in the middle of the depreſſion, is either broad or narrow; if it be broad, then a convenient Levitor muſt be be put under the skull; if it be narrow, the skull muſt be evenly terebrated, on that ſide of the crack that is ſound and bare, with a Trepan, and muſt be lifted up by help of Levitors: if the Levitor let down at one hole cannot raiſe the skull, we muſt make another hole, and then cut forth the diſtance, between theſe holes, with a turning ſaw, that in what part ſoever of the fiſſure it be needfull, the Levitor may be put down, and the skull raiſed by it.

A wound of the head, with a ſmooth chopping avvay a piece of the skull.

THis requires no manual operation, but it muſt be covered with fleſh as a skull newly raſpt with raſps: See underneath the obſervations of *Alphon. Schadæus*, a Senator of *Vima*.

A Contra Fiſſure.

THat which *Hippocrates* calls a Calamity, when it is found it is cured as the contuſion of the skull with a fracture, under the whole skin; namely, by making inciſion in the skin with a knife, and ſeparating the *Pericranium* from the bone, and (*if the crack that penetrates be narrow*) we muſt perforate the skull with Trepans, *&c.*

A prick of the skull not penetrating, and one penetrating.

A Prick on the skull that doth not penetrate, muſt be taken off with Piercers, Table XXIII. Figure I. but when it penetrates through both Tables, the skull muſt be opened with Trepans, ſetting upon the point the pin of the male Trepan, untill it make a print, upon which the female may ſtand faſt: Now that theſe two operations may be performed quickly, ſafely and pleaſantly, the *Pericranium* muſt be ſeparated from the bone.

This way of curing wounds and fractures of the head, far excels that which *Fælix Wurts, lib. de cerat. varior. vulnerum, cap.* 7, 8 & 9. ſo much commends, and our Barbers in Germany every where follow, as if he were *Apollo's* Oracle; yet oftentimes with great danger to the life of the Patients. And I wonder not that the cure doth oftentimes not anſwer expectation, when as the place of *Wurtzius* that is quoted contains many errours; which young Chirurgians may obſerve, if they will take a little pains to compare the short way of *Hippocrates*, with that of *Wurts.*

The XXXIII Table.

Of the paring off a prick of the skull; the cutting of the temporal muſcles; the cure of ancytoblepharon; *of a perfect Suffuſion, and an* Ægylops; *of the way to fix the eye.*

FIG. I. ſhews how a prick on the skull, that doth not penetrate is taken away with a Piercer, Table III: Figure I, after that the skin is cut, and the skull is laid bare.

TABVLA XXXIII

Fig. II. The finger, when the hair is ſhaved away, ſearcheth the place where the temporal muſcles are cut, which is done between the crown, the temporal muſcle, and the muſcle of the fore-head; it proves alſo whether the veſſel under it be a vein or an artery. If the lower jaw being moved, you feel with your finger the motion of the temporal muſcles, you muſt ſeek for a vein or artery in a higher place; the veſſel is an artery, if you feel pulſation; but a vein, if you feel none.

Ancytoblepharon is cured with one hand: Now the ey-lids either grow together, or elſe they grow to the white or *cornea* or to both coats of the eye. The growing of the ey-lids together, is cured by the uſe of a crooked knife (Table VIII. Figure VIII. to whoſe point there is faſtned a very ſmall and sharp button of ſilver) which is thruſt in at the inward corner, where they never almoſt grow together, between the eye and the ey-lids (ſo that you may place the blunt ſide toward the eye, and the ſide that cuts to the place where the ey lids join) till you come to the outward angle; then you muſt prove with your finger the place which muſt be cut, before you do cut it; and this being found out, you muſt cut the place where the ey-lids join together. When you have made inciſion, you muſt put a liniment between both ey-lids, that they may not grow together again.

Where the ey-lids ſtick faſt to the coats of the eys, the edge of the knife (which is nothing elſe then the broader part of the Probe Table VIII. Figure VI.) with great moderation muſt be thruſt in between the ey-lid and the coat of the eye, whereby thoſe things that ſtick together may be ſeparated, without doing any hurt, if poſſibly it may be ſo, to either part. But if it be neceſſary to hurt any one part, let rather the *adnata* of the ey lid than the eye, be cut. But when the eye is freed from the eye lids, a clean linnen cloath muſt be put between them, that they may not be glewed together again.

Fig. III. repreſents a ſuffuſion in the right eye, that, Fig. IV. muſt be put down with a needle; and moreover, a little ſwelling with a coat riſen between the noſe, and the greater cauton of the left eye, and is broken inwardly (which men call an *Ægylops*) and it cannot be cured by medicaments; wherefore the ſwelling is laid hold on by the teeth of the Puller, and it is cut at the bottom with a knife (Table II. Figure I.) yet ſo that ſomething of the ſpongie ſubſtance muſt be left behind; otherwiſe there would follow a perpetual running forth of tears by the cheeks.

Fig. IV. ſhews how before we couch a cataract that is ripe, the ſound eye muſt be ſhut cloſe with cotton, and a ligature; alſo it ſhews the place where the needle is put in (Table VIII. Figure IV.) which *Albucaſis* deſcribes *lib.* 2. *cap.* 23. in theſe following words; put the end of the needle near to the coat called *cornea*, by the thickneſs of the *radius* (or blunt Probe) into the very white of the eye, which reſpects the leſſer or outward angle.

Of a ſuffuſion.

A Cataract that is perfect, ripe and compleat, which is grown into a ſmall skin, as they call it; the laſt remedy for this is to part it from the circumference of the apple of the eye near which it grows, thruſting in a needle through the *cornea*; and if this ſucceed well, the ſame moment that the skin is taken away the ſight is reſtored. *But the Oculiſt muſt conſider, before he begins his operation, whether but one or both eys are affected with it:* and if, both eys being covered, the Patients are ſeemingly quite blind, the operation will be eaſier; for we can fear no worſe though the operation ſhould not ſucceed well. *But when but one eye is hurt, and the ſound eye will ſerve to ſee withall, we muſt not ſo raſhly go about it; eſpecially if the ſmall skin, or web, be not well ripe, which ſometimes it will hardly be in three, four, five or more years.* Nor yet muſt the matter that makes this web be any waies made thicker, as *Iohan. Baptiſta Silvaticus, controverſ.* 56. moſt elegantly decides this queſtion. And though moſt Authours require a little thickning of the humour, yet it is apparent by experience, that the Cataract will be more eaſily couched, *when it is grown ripe perfectly.* For that which is not ripe, is yet ſoft and ſnotty, and reſiſts not the point of the needle; nor can it be taken away whole, but is cut and grows again, or elſe it grows harder, or mingled with a watry humour; that not only the ſick can ſee nothing, but alſo all hope of cure by a ſecond operation (for if it be twice couched it is but in vain) is taken from them; which alſo uſeth to fall out, if the cryſtalline or vitreous humour, or their coats, be hurt by the point of the inſtrument; or but only the *uvea*, about the apple of the eye, be torn. By theſe things it is evident, that this kind of remedy is very doubtfull and uncertain; and by reaſon of the great difficulty

culty of it, an errour that cannot be mended may eaſily be committed: wherefore health muſt never be raſhly promiſed to the Patient, as Mountebanks uſe to do (*who are never aſhamed though they do not perform their promiſes ſo they can get by it*) but we muſt promiſe to do our beſt. I, to ſpeak the truth, never tried this manual operation, though I had the inſtruments ready by me; but I ſaw it twice performed by an Italian with good ſucceſs, upon one eye of a certain Nobleman of *Padua*, and of a Monk of *Verona*. But the Artiſt, who was of *Padua*, ordered his manual operation thus: The Patient's body being prepared, and God called upon for his aſſiſtance, he choſe a private chamber, where the light was moderate; and upon a clear and quiet day, three hours before dinner, he placed the Patient, yet faſting, on a ſeat near the bed (at his back there was a bolſter or pillow) ſo that he might look toward the light; on the ſeat that was oppoſite the Chyrurgian ſate, in a chair with his legs open, and the Patient ſitting between his legs, and both his hands leaning on both ſides upon his thighs; at the back of the Patient an Aſſiſtant (holding the Patient's head firm and upright with both his hands) covered his right eye, which was ſound, with cotton and a band (ſee this Table Figure IV.) This being done, the Aſſiſtant laid ſome cushions between the Chyrurgian and the Patient, that the Artiſt's arm might ſtand ſteady. See in *Fabritius Hildanus Cent.* IV. *Obſerv.* XVI. an inſtrument whereon the Chyrurgian's arm leans, as upon a block or pillar. This being likewiſe done, the Chyrurgian with his right thumb rubbed the eye that was ill, ſhutting his ey-lids, and then preſently opening them again; and firſt chewing Fennel ſeed in his mouth, he did warm the eye with the vapour of it; then he took a golden needle (becauſe the Cataract to be couched was white, but a ſilver needle is requiſite, when the congealed humour is black, or of any other colour) which was long and the handle of it was chamfered and wound about, that he might hold it the faſter; and it was moſt ſharp at the point, and was made leſs by degrees, Table IX. Figure IV: Wherefore he thruſt this in with his left hand, near to the place of the eye, leaning upon the outſide of the eye, in the white that is not far diſtant from the *Iris*, ſomevvhat above the middle of it; and this he did not do violently, but winding it about by little and little, untill he penetrated the coat called *cornea*; which

the Patient eaſily indured, with very little ſenſe of pain: The needle thus thruſt in, he by and by directed it tovvard the hole of the *pupilla*, where the Web grevv; and by degrees he brought it to the innermoſt place of the skin; which was done the more conveniently, becauſe the golden needle might be ſeen through the *cornea*. With this needle thruſt thither gently, and that he might remove the Web from the circumference of the hole, having turned it up and dovvn ſometimes (for it doth not alwaies ſucceed the firſt time) he preſſed it dovvn; and when the skin was freed in one part, he did at laſt ſeparate it with his needle, whereſoever it did yet ſtick; and he thruſt it dovvnwards into the lovveſt and obſcure part of the eye. When the skin was come belovv the region of the *pupilla*, the Chyrurgian shut the eye, and left the needle within it for a quarter of an hour, that the Web might ſtay in the lovver part, into which it was forced, which is known if the skin do not mount up again when the eye is moved. *In the mean vvhile heed muſt be taken that in couching a Cataract vve do not cut it into many parts*; for thoſe pieces though they be preſſed down, yet will they be eaſily brought up again to the ſeat of the eye, and floting there will hinder the ſight. All theſe things being rightly performed, the couching of the Cataract ſucceeded well alſo; the black eye ſight began to appear, and the Patient began to ſee. At length thruſting down the eye-lid, and shutting the eye, he drew out the needle again gently, leſt the matter which made the Cataract, ſhould riſe up again to its former place, or the vitreous or cryſtalline humour ſhould be hurt. Nor is there any fear of the watry humour running forth, becauſe the hole made in this thick coat falls down again immediately ſo ſoon as the needle is taken out.

The operation being thus ended, and the eye being well and ſound, yet upon both eyes, kept shut for ſix daies, he did daily three or four times lay on cotton which was wet on one ſide with Roſe-water and Fennel-water, to which he added a little Saffran and Fennel-ſeed in powder, for greater corroboration. But to prevent inflammation, he applied to the fore-head a linnen cloath moiſtned with the white of an Egg beaten, on which were ſtrewed *Galen's* aſtringent powders; and above the cotton and the defenſative, now mentioned, he bound another linnen cloath with a band. From that time

the

the regiment of the Patient's diet was not large; but he was alotted a very ſpare diet. And that the ſight, not yet uſed to much light, should be overcome by it, he commanded that the Patient should ſtay for a time in the dark, shutting the wooden windows all about, and should by degrees uſe himſelf to the light. And alſo that the ſpirits might not be carried to the eye with any force, he did forbid all vehement motion, as coughing, ſneezing; crying loud, and great ſtraining when the Patient went to ſtool, or to make water. He lay on his back when he did eat or drink, neither did he riſe to go to ſtool, but he had a Cloſe-ſtool of wood ſet under him. And thus the Patient having regain'd his former ſight, by a diligent uſe of Prophylacticks, and by an iſſue burned in his Arm, he lived ſafe and well many years. Alſo a notable Oculiſt N. *Marianus*, by birth a Roman, couched a Suffuſion, very fortunately, in both eyes, according to *Celſus*, when I ſtood by in *Vlma*, 1637. in the moneth of December, for Mr. *Tobias Neubronnerus*, and Miſtis *Kazenbackin*. And theſe things shall ſuffice concerning a Cataract happily couched, which I have therefore brought out from my Shop of Obſervations, that ſuch as are ſtudious in Phyſick, if Mountebanks, who are moſt commonly truſted to cure theſe Patients, shall in their preſence not proceed as they ought, they might be able to correct them. And ſince that the manual operation for a Cataract is the moſt curious of all, *Celſus Libr.* 7. *Cap.* 7. *De natura Oculorum & eorum Suffuſione*, hath moſt clearly ſet it down, to whom I refer the Reader; and ſhe that deſireth more, let him read *Platerus*, or *George Bartiſch* the Oculiſt at *Dreſon*. For the diſcuſſing of Cataracts firſt beginning, many deſcriptions of *Collyrium's* are found in Authours, to which they attribute moſt ſingular effects. I have tried that the gall of a Pike, with a little Sugar mingled together, after I had purged my whole body, and had laied on a Veſicatory behind my ears, being dropped into my left eye by my Brother's Son, it reſolved in one weeks ſpace a Cataract that was then beginning: *Adrianus Spigelius* often uſed this remedy ſucceſſefully, who beſide this did very much commend unto me the oil of the Liver of a River Weeſel (concerning which ſee *Foreſtus Lib.* 11. *Obſervat.* 35.) and the eye-water of *Martin Rulandus*, and

and that other which is like to it, as being very good, and much uſed at Naples. This was deſcribed by *Iohn Engliſh* in his practice, which he calls the *Engliſh Roſe*, and *Sennertus* makes mention of it, *Pr. L. 1. p 1. ſect. 2.* yet leaving out the deſcription, which is this: Take Fennel, Rue, Eybright, Vervain, Tormentil, Betony, Roſes, wild Endive, Maidenhair, Chickweed, Pimpernel, Swallow wort, Paper, Piony, Vine leaves, Smallage, Agrimonie, Honey-ſuckles, of each alike, bruiſe them; and the next day, put them thus bruiſed in white Wine; the ſecond day in a Boies water who never knew Woman; the third day in Womans milk; and the fourth day in the pureſt honey; at this time you muſt diſtill them, and keep it for your uſe. I never uſed theſe two waters, yet beſides my purpoſe I would propound them to ſtudious young men, that they might trie the effects of them, which were ſo much commended to me by a moſt famous Phyſitian, when they ſhall have occaſion.

Fig. V. shews the hole in the greater cauton of the eie, with a coat of the Impoſtume; upon this hole is a pipe ſet (*a* Table I. Figure I.) that it may defend the eie; and by preſſing the skin near to it, may dull the feeling, whileſt the naked or rotten bone is burnt with a red hot iron, made like an Olive (*b* Table XIX. Figure VI.) thruſt into the pipe; then lay fine lint on the bone cauterized, untill the ſcale part from the bone; then the hollow Fiſtula muſt be join'd together, with a ſponge wet in Allum Wine, and preſſed forth, and kept down with an inſtrument with a broad head; when it is glewed together, the wound muſt be kept dreſt with Sarcoticks and Epuloticks.

Fig. VI. shews the right eie faſtned with a ring (*c* Table VIII. Figure V.) and a Polypus hanging down from the right noſtril, and the cutting of a tumour with a coat under the skin, riſen in the upper jaw: whoſe coat being unawares broken with a Diamond (*d*) the matter being evacuated, I ſeparated it, as far as the root went, with a broad Probe, from the skin and the muſcles under it; which I cut out with a sharp knife (Table XII. Figure II.) and I touched the ſmall bone very well with an actual cauterie (Table XIX. Figure VII.) this being done I brought the wound together, with plaiſters ſpread upon linnen.

Fig VII. repreſents a glaſs veſſel (*e* Table VIII. Figure X.) bound to the eie, by the tunnel whereof collyrinous are dropt into the eie by drops; then it shews the way to draw out a Polypus out of the noſtrils, by an inſtrument invented by *Hierom. Fabritius ab Aquapendente*; alſo the Polypus laid hold of by the Pincers, and placed

placed beyond them. *Matthæus Glandorpius* hath written a moſt elegant Tract of the nature and cure of a Polypus, which thoſe that will cure it ſhall read with exceeding great profit.

Fig. VIII. ſhews how the cutting of a tumour with a coat, which grew amongſt the muſcles of the upper lip, as great as a Hen egg, did abſolutelie deform a moſt honeſt and moſt beautifull Matron, not without great pain, her lips, for the cutting forth of the tumour, were drawn one from the other with hooks: See underneath a ſingular Hiſtorie.

Fig. IX. ſhews an excreſcence of flesh like a ſponge in the forepart of the Palate, riſen behind the cutting teeth; it was greater than a Walnut, and as often as it was touched with the finger or tongue, but eaſilie, it would ſend forth a great quantitie of blood: Of which accident ſee underneath an eſpecial obſervation.

The XXXIV Table.

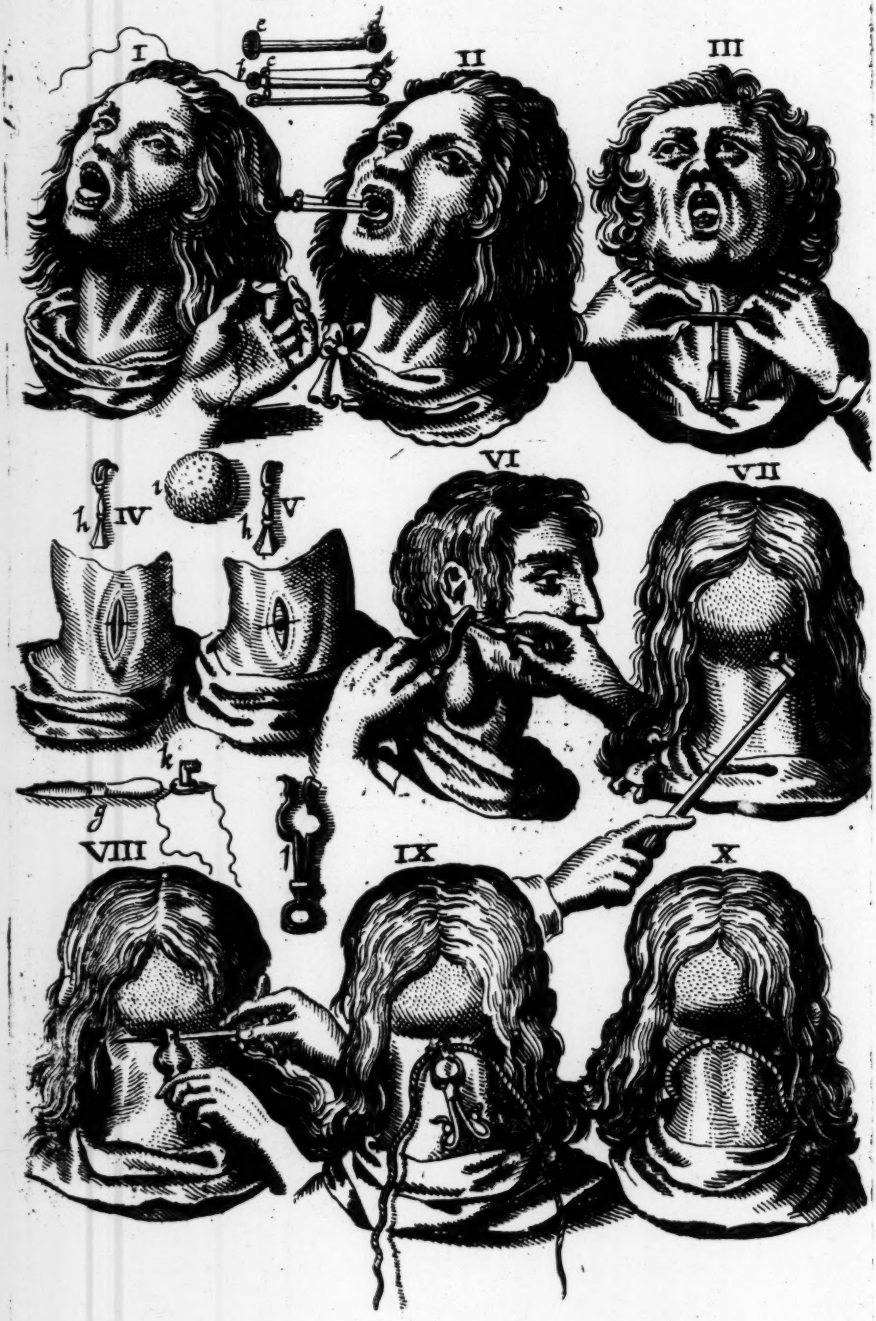
Of the cutting forth of the Uvula corrupted; perforation of the ſharp Artery; cauterizing the hinder part of the Head; and of the manner of making a ſeton, with a red hot needle, in the nape of the neck, and tip of the ear.

Fig. I. ſhews half the Uvula ſphacelated, which, before the corruption ſpread, and infect the whole Uvula and the parts about it, is to be cut off with a thread put to it, and bound about it with a ring (*a* Table IX. Figure VII.)

Fig. II. The ring being prepared (*a* Table IX. Figure VII.) the Aſſiſtant muſt put down the tongue with a *ſpeculum oris* (Table XI. Figure IV.) (Table XXXVI. Figure VII.) But the Chirurgian muſt lay hold, with the ring, on that part of the Uvula which is corrupted, and he ſhall draw ſtronglie the thread that is marked (*b*) either with the left hand or with the right, and ſo he ſhall moſt cloſelie bind the Uvula; when he hath made a knot by the Uvula, he muſt cut off the thread (*c*) with his cizers, and drawing out the inſtrument, he ſhall leave both the ends hanging out of the mouth, untill the Uvula falls off the ſecond or third day.

If the Uvula grow flaggie by reaſon of much phlegm running into it, the powder of raw Allum mixt with white Pepper, is uſed with excellent ſucceſs, blown up to it. The way to blow in ſuch powder

TABVLA. XXXIV.



powder, is this: The tongue being thruſt down with *ſpeculum oris* (which the Chirurgian ſhall hold in his left hand) he ſhall preſentlie with his right hand ſet the ſpoon (*d*) filled with this powder to the Uvula; then ſhall he take the other end of the pipe (*e*) in his mouth, and blowing ſhall ſcatter all the powder in the ſpoon about the mouth and Uvula, See *Guilhel. Fabrit. Hildan. Cent.* 2. *Obſerv.* 2, of the cure of the Uvula relaxed.

Fig. III. The ſharp Arterie, in affections of the Larinx which are readie to choke us, is moſt ſafelie perforated by a Chirurgian who is not ignorant of Anatomie, the way following: The Patient's head being inclined backwards, not only that the ſharp Arterie may be ſeen plainlie; but alſo that it may be made longer, and the membranous diſtinctions in it may appear more exactly, a line muſt be drawn with ink, by the middle and forepart of the length of the neck, almoſt as far as the hollow part of the throat. Then, with the finger, we muſt touch the head of the ſharp Arterie; next we muſt exactlie, with the finger, ſearch out the end of the Larinx on the forepart; this being found out, we muſt deſcend untill ſuch time as three or four rings of the ſharp Arterie be paſt over (three in thoſe that have but ſhort necks, and four in thoſe that have long necks; which bounds we know either by ſenſe or by reaſon; by ſenſe, in a lean neck; but by reaſon, imagining and conjecturing at the largeneſs of three rings; in which caſe we muſt view the ſharp Arterie of one that is well) that there inciſion may be made; yet not immediatelie under the Larinx, leſt inflammation, which eaſilie follows after inciſion, ſhould be communicated to the Larinx, that was before ſhut too much. The membranous place being thus found out, the middle circle, between two griſly circles, muſt be marked with ink, according to the length of the neck: Afterwards the skin. with the fleshie membrane under it, here and there, being laied hold on with the fingers of the Aſſiſtant; namely, with the thumb and fore-finger of both hands, by the length of the line made from the Larinx to the throat (*for ſo there is no danger that any veſſels, nerve or muſcle ſhould be hurt*) it muſt be cut with a crooked knife (*f*) ſo that the overthwart line be in the middle of the inciſion; and the inciſion muſt be made ſo long, that being dilated it may contain the thumbs breadth, and may admit the uſe of the double edged knife (*g*.)

Fig. IV. Inciſion being made, the lips of the wound muſt be drawn open with the fingers, and the blood muſt be wiped away with the ſponge (*i*) that the two muſcles which lie immediately upon

upon the ſharp Artery, and are called *Sternohyoidæi*, may appear. Then the muſcles which are diſtinguished by a certain white line, are to be drawn aſunder, at length, with the haft of the knife (*h*) that the body of the ſharp Artery may come to be ſeen.

Fig. V. When the Artery appears, the diſtance muſt be kept open with a blunt hook here and there, untill inciſion be made overthwart, between one and the other cartilage by the edge of the divided ſpatha (*g*.) But the knife muſt be thruſt in ſo deep, that it may reach the hollow of the ſharp Artery; and this is the ſign that it is gone in ſo far, if the breath come forth of the wound with a murmuring noiſe. Then a pipe of ſilver (*k*) with holes in it, and crooked, that is exactly as big as the wound made in the Artery, that is ſhort that it may not touch the inſides of the Artery, with ſhoulders that it may not be ſuckt in with the breath, and tied with two threads that it may be drawn forth and faſtned, muſt be put into the wound made in the Artery; and there it muſt be left ſo long as all fear of inflammation is paſt. Then the pipe muſt be drawn forth, and renewing, if need be, the wound of the skin and fleshy membrane by ſcarification, the lips muſt be drawn together and ſtitched; and being ſo brought together, they muſt be kept ſo with plaiſters ſpread upon linnen cloath, and with convenient ligature,

Fig. VI. repreſents a ſeton burnt into the tip of the left ear, to intercept the matter that ran thence continually, by a vein pricked through with a needle and burnt, to nourish and augment the tumour, which hanging by a thicker baſis from the neck, by reaſon of the angular veins, and the inward branch of the carotick Artery, can neither be cut off, nor yet ſeparated from the skin. The Eſchar being taken away with butter, I put firſt into the ſeton a ring of lead, untill that was perfectly healed; after that I put in a gold ring with a rich pearl in it, inſtead of the leaden ring, ſuch a one as your Arabian women hold a great grace to wear in the laps of both their ears: With this putting in of rings, not only the increaſe of the tumour was hindred, but alſo by accident it grew ſo ſmall, that the noble Patient, wearing a ſtomacher, could eaſily hide it. See Table XXXV. Figure II. of cutting forth and amputating a tumour contain'd in a cover.

Fig. VII. shews the cauterizing of the hinder part of the head, of people in years, with a red hot iron that is round, where there is danger of an Apoplex and other ſleepy diſeaſes. But the hollow of the hinder part of the head uſeth to be cauterized with a red hot iron,

iron, eſpecially in children new born, and thoſe that ſuck the breaſts who are frequently troubled with the Falling-ſickneſs, by reaſon of a cold and moiſt temper of their brain. For the cure and preſervation from this diſeaſe, Phyſick hath found out a preſent remedy; namely, to burn the hinder part of the neck; which is as it is a moſt ſafe way, ſo it doth moſt commonly make revulſion, derivation and evacuation of the phlegmatick humours, with apparent good which burthen the head. Hence it is that cauterizing the nape of the neck is ſo common in ſome places; that at Florence none or very few children are found, that are not ſo cauterized preſently after they are baptized. The hair therefore being ſhaved off, we muſt make an iron inſtrument red hot, which is the oval and long faſhioned (Table VII.) fit for the hollow of the hinder part of the head, between the firſt and ſecond vertebra of the neck; wherewith, when the danger is ſmall in tender age, and when the paroxyſm is off, it muſt be touched only once lightly; but when the danger is greater in riper age, in the paroxyſm, and when for many daies the place muſt be kept open, the iron inſtrument muſt be thruſt on deeper twice or thrice. Afterwards we muſt apply to the place cauterized, either butter with *Diapalma*, or elſe *Triapharmacum*, that the Eſchar may fall off; which being taken away, the ulcer muſt be kept open ſo long as need requireth, and muſt be let run with *ceratum ſacrum* or *Diachylon*. Laſt of all let it be brought to cicatrize with *ceratum de Ceruſſa*, or ſome other healing medicament. A Seton in the ſame place made with three inſtruments; namely, with the Cizers, a red hot Needle, and a Seton, voids forth the humours that fill the head, by putting them back from the eys to the neck; it makes derivation of thoſe that fall down to the jaws and throat; and it intercepts thoſe which fall on the *ſpina dorſi*, and the joints of the limbs. *But ſince there is ſo great benefit of a ſeton, I thought good, for the help of Students, to ſet down the reaſon and manner how to make it, both in words and figures.*

The Patient muſt ſit on a low ſeat, and the Phyſitian with his forefinger muſt ſearch out the place fit for a ſeton, or that cavity which is between the firſt and ſecond vertebra of the neck. When he hath found this, the hair muſt be preſently ſhaved off, and the place to be bored through muſt be marked long waies with writing ink, ſo that the line may be in the middle of the hollow:

hollow; but that the ſaid middle place may not be miſſed, the Patient muſt hold his neck ſtreight to the Chyrurgian; then the Chyrurgian ſhall alſo mark both the holes, that muſt be made both on the right ſide and on the left, with writing ink, that the diſtance between both marks may be one finger and a half broad, more or leſs as the Patient's skin is thick or thin.

Fig. VIII. The place being marked, and the ink dried, the Patient muſt ſo lean back with his head, that the skin and fleshy pannicle may be relaxed; then the Chyrurgian ſhall firſt with his fingers draw away the skin and fleshy membrane, from the muſcles that are under them, and of the ſaid covers, as much as may be done (yet leaving the muſcles of the neck untouched, for fear of convulſion and other ill accidents which may happen) with a pair of Pincers (*l* or *m* Table VIII. Figure I, II, III.) that are fit for it, he ſhall lay hold of them, draw them to him and bind them faſt, as hard as the Patient can well indure it, or rather untill it cauſeth pain; that ſo the nerves being bound, the part to be bored through may grow ſenceleſs almoſt, and the Patient may leſs feel the burning inſtrument, which otherwiſe is painfull enough: But he ſhall ſo lay hold of the skin and membrane with his Pincers, that the line drawn before on the length of the cavity, and the marks of the holes, to be made on both ſides, may be ſeen through the holes of the Pincers exactly. Then he ſhall thruſt in the needle (*n* Table VII. Figure IV.) very well made red hot, that it may paſs through both holes of the Pincers in an inſtant, and ſhall ſuddenly draw it forth again.

Fig. IX. After this, the Pincers remaining unmoved, he ſhall paſs a pointed inſtrument through it, which at one end hath a waxen little pellet, and at the other end a ſilken thread faſtned to it (Table VII. Figure V.) and he ſhall draw this thread, wet in the white of an Egg, as far as the middle of it ſmeared with butter, and there ſhall he leave it.

Fig. X. Theſe things being done, he ſhall bring both ends of the ſilk to the foreparts of the neck, and to the breaſt; and he ſhall bind the part with a four double linnen cloath wet in Roſe-water and the white of an Egg, to hinder inflammation, and then wrung out again, and with convenient ligature. The daies that follow, commonly untill the ſixth day, before he doth draw the ſilk by degrees, ſometimes to the right hand, and ſometimes to the left, he muſt anoint that part of the ſilk which muſt be drawn under the skin, with ſome digeſtive; and on the outſide he ſhall

lay

lay a four double cloath preſſed out with the ſame medicament; untill ſuch time as the ulcer breeds good quitter, and the fear of inflammation is over. Then the ſilk muſt be drawn under the skin, with this or the like unguent firſt being anointed:

Take Venice Turpentine washed in Mallows water one ounce,
Syrup of Roſes half an ounce,
Powder of Turbeth and Rheubarb, of each a ſcruple and a half; mingle them for an unguent.

And lay upon it the plaiſter for iſſues, (deſcribed Table the laſt. letter *l*) ſo long as you are minded to keep the ulcer open. Laſt of all let him draw forth the ſilk by little and little, and glue the skin faſt to the muſcles under it, laying upon it *ceratum divinum*, a four double bolſter, and a preſſing ligature.

The XXXV Table.

Of the cutting of a ſeton, and the pulling forth of hairs that prick the eys; cutting out of tumours with coats, curing the upper eye lid, namely when it is either relaxed or contracted: of the cure of Staphyloma and Pterygium; of the bringing together of the lips of wounds in the cheek, by means of Plagets that are emplaſtick; and of the curing Hare-lips.

FIG. I. is the way to make a ſeton with a pair of pincers (Table XII. Figure X.) and with a pen-knife (Table XVIII. Fig. VI.) pictured; which *Guilhelmus Fabritius Hildanus cent.* 1. *obſerv.* 40. deſcribeth, and prefers it before the former way of making is with a red hot iron, becauſe the fire both dries and hardens the part, and puts the Patients to pain and horror. But becauſe that drineſs is corrected with freſh butter, and alſo heat and ſome pain are very effectual means to draw to them the peccant humours, and the ſick are as much afraid of cutting as they are of burning, neglecting *Hildanus* his arguments; I have burned a ſeton on the necks of many people with very good ſucceſs, obſerving only that way to delude the Patient, which I ſet down Table XXX. Figure VII.

TABVLA XXXV

Fig. II. ſhews 1. the pulling forth of the hairs on the ey-lid according to *Paulus* his way: The ey-lid muſt be inverted with the fingers, the hairs that prick and hurt the ey muſt be pulled forth with pullers, and the skin muſt be cauterized with a little knock at the end of the probe made red hot, that it may be candenſed and the hairs may no more grow upon it. 2. The cutting forth of an Atheroma, which bred in the middle of the forehead, and was greater then a Walnut: In this Figure the skin is cut which covers the caſe of the Atheroma, overthwart with a crooked knife; but in the fourth Figure long waies, that the whole Impoſtume may be taken forth with its coat. Effects worth conſideration do follow the inciſion made on the forehead overthwart; for the fibras of the muſcles of the forehead being cut overthwart, the ey brows hang down, and hinder the opening of the ey-lids; alſo there follows an incurable palſie of the ey-lids, by reaſon of the cutting of the nerves; which thing was proved by *Adrianus Spigelius*, upon a ſmall wound only on the nerve of the forehead, as he obſerved in *Fabr. corp. hum. lib. 7. cap. 2.* But becauſe this kind of Tumor aroſe in the middle of the muſcles of the forehead, and the overthwart inciſion did hurt to very few fibras of the muſcles, there followed upon this no palſie or other inconvenience, which might hinder the eye lids to be lifted up. But that the cutting forth of this Atheroma may be better underſtood, I ſhall very brieflie ſet down the cure of Tumors that are covered with coats.

Tumors with coats, as *Meliceris*, *Atheroma* and *Steotoma*, hang forth either as figs by a ſlender ſtalk, (Table XXXIII. Figure II.) or elſe with a larger root they ſtick within any part. Thoſe that hang forth are not cut out, but are cut off at the roots in timerous people, a thread being bound about the part to ſtupifie it, and left there till the ſwelling falls off; but in ſtout men they are cut away with a ſharp knife. But if the blood runs forth abundantlie after that the Tumor is cut away, or the thread leaves any part of the root behind, then, that we may not fear that it ſhould grow any more, the place muſt be lightlie touched with a red hot iron, and when the eſcar is fallen, we muſt heal it up again. This way of manual operation is moſt readie, and by reaſon the ulcer is but ſmall and equal, the cure is ſoon done. Thoſe that lie upon the parts with a larger baſis, they are either ſmall ends or mean ends, or greater, or very great: the ſmall ends are as big as a ſmall nut, the mean ends are as big as a Walnut, the greater as big as an Egg, and the greateſt of all are as big as a Pompion. The greateſt of all,

by reaſon of veins and arteries, cannot be taken forth, wherefore they muſt be cut off. But amputation or cutting them off according to *Hierom. Fabrit. ab Aquapend.* is done with Pincers, which receive and take faſt hold of the whole Impoſtume as far as the roots of it; which afterwards to hinder the flux of blood, is cut away with red hot knives with sharp edges, all above the pincers, (ſuch a pair of pincers as *Guil. Fabrit. Hildan.* deſcribes *cent.* 1, *obſerv.* 2.) without drawing the skin from the bag. Then the place muſt be dreſſed with digeſtives, cleanſers, ſarcoticks and epuleticks. The reſt are cut forth and not cut off; the cutting of them forth is performed thus: Firſt of all the Patient muſt be placed as commodiouſly as he can be, either on a ſeat or on a bed oppoſite to the clear light and to the Chirurgian; and if it be a fearful child or woman, or one that is faint-hearted, he muſt be bound with his hands behind him, leſt either being impatient of pain, he ſhould divers waies with his hands hinder the Operator in his operation, or being frighted he ſhould toſs himſelf every way, as *Marcus Aurel. Severin.* out of *Hippocrates de offic. Med.* warns us *L. de abſceſsib. anon. cap.* 23. The Patient being ſeated, the hairs muſt be ſhaved away, (if the Tumor be on the head, or elſe there is no need to do that) and with ink we muſt mark out the length we mean to cut, which muſt be as much as the tumor is in roundneſs; ſometimes the Tumor requires a double inciſion, like to a croſs on the skin, and then the firſt inciſion muſt be longer then the ſecond. There is made but one inciſion upon a ſmall and mean Tumor, eſpeciallie when it ſticks to the muſcle of the fore head or temples, leſt their fibras or veſſels ſhould be burnt overthwart. A Tumor that is next to a mean, called a greater, requires to be cut like to a croſs; and a Tumor that is covered with hair will admit of the ſame inciſion alſo: Yet in a ſingle and croſs fashioned inciſion, we muſt take care that the bag underneath the skin be not cut aſunder, eſpeciallie in *Meliceris*, for then the humor runs forth, and the tumor falls, ſo that the bag can hardlie be taken out. And it is neceſſary that the coat which contains matter like to honie, or to pap, ſhould be taken out whole; for if but the leaſt part of it be left behinde, it will be the occaſion to make it grow again: But in Steatoma, whereas that fattie tallow, or the more ſolid ſubſtance of the ſuet hardlie will run forth, there is not ſo great danger in hurling the bag; and if the tumor do not fall down, the coat may be pulled away very eaſilie; wherefore the crooked knife, with which onlie the skin muſt be cut, muſt have

an

an edge on the outſide that is turned back and blunted, (Fig. II.) inciſion being made, either but one at length, or two like a croſs; the larger part of the probe (Table VIII. Figure VI.) muſt be thruſt in between the skin and the bag, which hath another colour then the skin hath; and with this the bag laid hold on muſt be parted from the skin, which will be eaſily done, becauſe the bag doth not ſtick very faſt to the skin: But if the bag round about do ſtick more faſt to the skin, it muſt be parted with the edge of the knife held ſlanting, (Table II. Figure I.) and it muſt be ſeparated underneath with the handle of the knife, (Table XII. Figure IV.) whilſt you do make this ſeparation, the blood that runs forth muſt be continuallie wiped away with a ſponge, that it may not hinder the Operator in his work. If the Chyrurgian come to the bottom of the bag, he muſt cut the vein that brings nourishment to the tumor; with the edge of the knife overthwartly, that not ſo much as the leaſt part of the bag may be left, to breed the tumor again. This being done, and the bag perfectly drawn forth, he ſhall join together the lips of the wound, (which if they be very looſe, ſhew that the skin is too much, and he muſt cut off the skin that is ſuperfluous, letting ſtitching alone at this time, by reaſon of the great pains the Patient hath endured already) laying plaiſters upon linnen croſs wiſe. Thus did I moſt happily cure two Atheromas, that were as big as Gooſe-eggs, upon the knee of a certain Prieſt.

But if the bag be already broken, either of it ſelf, or by the careleſneſs of the Chyrurgian, then it is neceſſary that either the tumor grow again, or that there remain in that place almoſt an incurable and ſtinking ulcer, where we muſt conſider the time when it broke. If it be broken now, we muſt thruſt in between the skin and the bag the greater end of the probe, or handle of the penknife, untill ſuch time as the membrane of the tumour be torallie ſeparated. But if it break long before, it muſt be conſumed with ſepticks in thoſe that are more fearful, or with red hot irons in thoſe that are more ſtout hearted. This being waſted, the wound muſt be digeſted, cleanſed, and incarnated and cicatrized. See *Ætius Tetrab.* 4. *ſerm.* 3. *cap.* 7, 8. and *Celſus lib.* 7. *cap.* 6, of the cure of *Meliceris*, *Steatoma* and *Atheroma* by manual operation, which he deſcribes in theſe words; ſhaving firſt all the hair off, if they are covered with hair, you muſt make inciſion through the middle, *either long ways, or with a croſs*; but the coat of Steatoma muſt be cut alſo, that what is within it may run

forth, becauſe that coat is not eaſilie parted from the skin and the flesh of the muſcles under it; but in the reſt, namelie *Meliceris* and *Atheroma*, the bag muſt be kept untouched and whole; but forthwith, as the skin is cut, the white coat ſtretched out shews it ſelf; and then with the haft of the knife the coat muſt be parted from the skin and flesh, and muſt be caſt out with that is contained within it: Yet if at any time the coat ſticks faſt to the muſcle on the lower part, that that may not be hurt, the upper part of that coat muſt be cut away with a pair of cizers, and the other part under muſt be left within; when the whole coat is taken forth, the lips of the wound muſt be joined, and a band or ſuture muſt make them faſt, (if the ſick can away with it) and above all muſt be laid a glutinative medicament: when the whole coat, or half, which ſticks faſt to the muſcle, or any part of the coat is left within, after corroſives, or a little fire, things muſt be applied which cauſe quitter.

Fig. III. Shews the relaxation of the upper eye-lid in the right eye, and the cure of the ſame in the left; which *Hierom Fabrit. ab Aquapend.* ſeems to prefer before the abſolute and cruel manual way *Celſus* uſed, in theſe words: But I, when the upper eye-lid covers the eye, lay on a glutinous matter, (or a linnen cloth wet in my glewing medicament,

Take Dragons Blood,
Frankincenſe,
Sarcocotta,
Maſtich,

Of each one dram, beat all with the white of an Egg, and mingle them, like to the thickneſs of Honie) bound on with two or three ſtrings all over the upper eye-lid; and another linnen cloth like the former (as for the ſtrings) I lay above the eye-brows on the fore head; then I tie both or all three ſtrings, drawn ſtreight, to the ſtrings underneath, and ſo the eye is held open: alſo it comes to paſs, that in a convenient ſpace of time, the eye lid relaxed is cured, by means of the ſaid glew that dries and bindes, and contracts both the fore-head and the eye-lid. This way of cure ſucceeds ſingularly well, becauſe it not only dries up what moiſture is run in, but it alſo hinders all new flux of humors; which thing I tried upon a Noble-woman, witneſs *Georgius Bamlerus*, who would not believe it, till he ſaw the effect of it with admiration.

Fig. IV. Repreſents the cutting of the fore-head in faſhion like a croſs, above the bag of Atheroma, whereof I ſpake before Fig. II.

Fig. II. making inciſion upon the skin with a crooked knife; and if the Chirurgian cannot part the coat from the skin with this probe, he muſt part it with his knife, Table II. Figure I. which that he may do as he should, he muſt proceed warily; and he muſt uſe the knife rather ſlantinglie then ſtreight out, for the ſtreight way will cut too faſt, and muſt needs hurt the bag. In the right eye a diſeaſe is repreſented called λαγωφθάλμιν, (that is when the upper eye-lid cannot cover the eye) and it is cured in the left, by an invention propounded by *Aquapendens*, which is is moſt milde, and if it be continued moſt certain: Let a linnen cloth wet in my glew be applied to the upper eye-lid, faſtened to three ſtrings, (1) and another to the cheek, ſo that it may be right againſt the upper cloth, with its ſtrings, (2) the glew being dried, and the cloths ſticking faſt to the skin, their ſtrings muſt be bound faſt together, and be continuallie tied faſter: And if theſe two cloths do not ſuffice, a third cloth muſt be laid on the fore-head above the eye-brow, with its ſtrings, (3) and a fourth to the cheek beneath the ſecond, and anſwering directly againſt the third (4) muſt be laid on, and theſe alſo ſtick faſt; the ſtrings muſt be tied together, and knit with a double knot, ſo it will be, that the upper eye lid will be ſtretched, and drawn to the lower eye-lid, and will cover the eye. *I never tried this way of cure, but I have often ſeen it uſed.*

Fig. V. shews the cure of Staphyloma, which ſometimes hath a larger baſis (*b*) then all the body of it beſides, and ſometimes a ſmaller then the reſt, (*a*) and this is performed by tying of it, called conſtriction: If the Staphyloma be in the right eye, the Patient is moſt commodiouſlie ſeated at the feet of the Chirurgian, and leaning back with his head upon the Chirurgians knees; if the diſeaſe be in the left eye, the Patient muſt ſit on a ſeat oppoſite to the Chirurgian.

Celſus lib. 7. cap. 7. deſcribes the conſtriction of Staphyloma that hath a narrow baſis: The eye-lids being drawn aſunder at the very roots, through the middle of the baſis of the Staphyloma overthwart, (from that corner which is proper for the right hand to the other) a needle is paſſed, carrying with it two pieces of flax, or a double thread; the middle of the double thread being cut aſunder, and the needle being removed, we muſt ſtrongly binde together the two ends of the ſingle thread upon the ſuperiour part, and the two ends of the other thread upon the inferiour part, and theſe cutting by degrees, do cut it out. But this manual operation, and that which follows, is uſed not to recover the ſight already

loſt (for that is impoſſible) but that moderate comlineſs may be repaired to the Patient's content.

Paulus Ægineta lib. 6. dere. med. cap. 19. ſers down the cure of Staphyloma that hath a broad baſis: wherefore we muſt paſs a needle without a thread, from the lower parts upward, through the baſis of the Staphyloma, and another needle drawing after it a double thread, we muſt paſs from that cauton of the eye which is to the right hand, to the other, through the bottom of the Staphyloma; and the firſt needle ſtaying in, which was thruſt through without a thread, we muſt cut the thread in the middle by the needles eye; and the needle being taken away, we muſt, by the threads, bind one part of the Staphyloma to the upper parts, and the other toward the nether parts. *Hierom. Fabrit. ab Aquapend.* in both Staphyloma's uſeth a ſilken thread not twiſted but ſingle; and red, becauſe the colour helps well both for conſtriction and for ſection. The thread being tied together in both diſeaſes, the white of an Egg muſt be beaten, and wool dipt in it laid upon the eye, to keep off inflammation. The next day after the taking off the ligature, the eye muſt be dreſſed with gentle medicaments, untill the threads, together with the Staphyloma, fall away.

Fig. VI. shews the cure of *Pterygium*, which growing firſt from the internal angle of the eye, extends it ſelf beyond the ſight of the eye, and hindring the ſight requires manual operation; which being performed by five hands ſucceeds excellently well, if it be performed that way I now ſhall ſhew you. The Patient, as I ſaid concerning Staphyloma, being rightly placed, the Chyrurgian ſhall apply a glewing linnen cloath both to his upper and under eye-lids, both of which ſhall have a long ſtring at the end, which the Aſſiſtant's hand, being far from rhe eye, ſhall lay hold of, and ſhall draw it to himſelf, that the eye-lids may be drawn aſunder; and being ſo drawn aſunder, may be kept in that poſture without any inconvenience to the Chyrurgian in his operation. Another Aſſiſtant ſhall put the ring, Table VIII. Figure V. upon the eye and hold it firm. The eye-lids being thus drawn aſunder, and the eye being held firm by the ring, the Chyrurgian very carefully ſhall put under his ſmall hook with the point of it a little crooked, Table VIII. Figure IX. to lift up the Pterygium about the middle of the ſight of the eye, that he hurt not the cornea; then he ſhall thruſt a needle

needle a little bent, which hath in it a ſingle ſilk thread, of a red colour, under the Pterygium which is lifted up by the hook put under it; and he ſhall take both ends of the thread in his left hand, and he ſhall ſeparate the Pterygium ſtretched forth by the thread, by little and little, from the middle as far as the end of it, with the haft of his knife, Table XII. Figure IV. held in his right hand. This being done let him take away the thread, and with his hook lay hold on that part of the haw that is ſeparated; and having laied hold of it, let him ſtretch it out, and ſo continue the ſeparation of the haw with the haft of his knife, untill he come to the great cauton of the eye, where the haw muſt be ſo acurately cut forth with the knife, Table XII. Figure II. that nothing may be left of it, which being ulcerated will hardly admit of any cure, nor yet any part of the caruncle may be diminished, leſt the diſeaſe of the eye called ῥύας be cauſed thereby. This manual operation being performed, driers muſt be applied to the eye, concerning which ſee *Sennertus*, *Fabrit. ab Aquapendente* and *Celſus*.

Fig. VII. repreſents a wound of the right cheek that was made by a cut; and the upper lip was cut as far as the fore-teeth in the middle like to a hare-lip.

Fig. VIII. ſhews the cure of the aforeſaid infirmities: The lips of the wound are brought to touch one the other, and being ſo brought they are kept ſo by emplaſtick linnen cloaths, untill they be healed: But the hare-lip muſt be helped the way here following. The cloven lip muſt be taken hold of on both ſides with ſmall hooks, and muſt be ſeparated from the gums with a fit knife, Table II Figure I. then a linnen cloath muſt be thruſt in betwixt the lip and the gums, that they may not grow together again; and glew on both ſides with ſtrings that muſt be applied: this being done the lips of the fiſſure muſt be renewed with a pair of cizers; and being renewed they muſt be brought to touch one the other with ſtitchings, which will not ſo ſoon break forth again, but by the ſtrings drawn together with the glew are kept ſo, untill the lips may grow perfectly together by the help of Spaniſh Balſom.

The

The XXXVI Table.

Of the burning of a rotten Tooth, the cutting forth of one that hurts the cheek, of the feeding of the ſick when their mouth is faſt cloſed together, of the ſtopping of a hole made in the Palate preternaturally, of the dangerous infuſion of liquors into the ears, of the drawing the Teeth aſunder which are faſt joined together, of the depreſſion of the lower Jaw, of the cutting of the band under the Tongue, and of taking things forth which ſtick in the Throat.

Fig. I. ſhews how hollow and rotten teeth, to ſtop the rottenneſs, are burnt with red hot irons, (fetcht out of Table XIX.) and thruſt into them.

Fig. II. ſhews how a tooth bred out of its place, and offending the cheek, is cut forth with an iron Inſtrument, Table XI. Fig. II.

Fig. III. repreſents the Tunnel applied, deſcribed and pictured Table X. Figure XI. whoſe narrow end is put between the outward gums, and the broader end receives the liquid nourishment, and lets it through the narrow end to the throat of thoſe whoſe teeth are very cloſe shut together.

Fig. IV. ſhews a Palate eaten away with the French Pox, ſo that the hole paſſed through into the cavitie of the noſe, and hindred the voice from being articulatelie pronounced; this I ſtopt with a golden Inſtrument, to which a ſponge was faſtned, whereby the Patient ſpake his words plainlie and diſtinctlie. After the uſe of the decoction, I touched that hole with red hot irons, which nature, after that ſome ſmall bones were caſt off, filled with flesh; when the ulcer was filled with flesh, I brought it to cicatrize with Gargariſms and drying Errhius.

Fig. V. admoniſhes the young Practitioners in Chirurgerie, that in curing the diſeaſe of the ears, they ſhould rather gentlie drop in any liquors convenient, than to caſt them in violently by a Syringe, leaſt the membrane of the Tympanum break, and there follow incurable deafneſs.

Fig. VI. draws aſunder, with a dilating inſtrument, (Table IX. Figure IX.) teeth that are cloſed faſt together, that the ſick may not

TABVLA XXXVI

not perish for hunger; where we cannot uſe the Dilatorie, nourishing Clyſters are with ſingular ſucceſs caſt in by the fundament, which I had trial of in *Melchior Feith*, who by reaſon of a wound in his ſtomach, was fourteen daies fed with nothing but Clyſters.

Fig. VII. shews the application of *ſpeculum oris*, very neceſſary to ſearch the diſeaſes of the jaws, Table XI Figure IV. For the foreſaid inſtrument not onlie depreſſes the tongue, but it alſo keeps the nether jaw preſſed down, untill ſuch time as the place affected be more nearlie ſearched out, medicaments may be applied to it, with the ſpatula ſet on the ſide thereof, and perforated with many holes; ſometimes only the tongue is put down, that the faults of the mouth may be ſeen: The more thick excrements of the tongue are ſcraped away with the crooked ſide of the Spatula, which has an edge, and theſe in very hot burning feavers commonlie ſtick faſt to it.

Fig. VIII. shews the way to cut the ſtring under the tongue that is too ſtrait, and as ſome think hinders mens ſpeech; which Midwives every where tear aſunder with their nailes, and our Barbers imprudentlie rend it with a lancer, oft-times with a great flux of blood, and pain, which afterwards proves the cauſe of other michiefs; which thing *Hierom Fabrit. ab Aquap.* relates in theſe words following, annexing withal how we ought to perform this manual operation: Beſides the depreſſion of the tongue, and ſcraping of it, there is a third way of manual operation to be performed about the tongue, when the ſtring under the tongue is cut; of which before I ſpeak, I would give you warning of the rashneſs of Midwives every where, who in all, making no difference, cut the ſtring under the tongue in every new born child, with the nails of the fore finger, which they ever keep ready and sharp for that purpoſe; which office if they should not perform, they cannot believe that the childe will ever ſpeak; as if by nature (O the wonderful and not ſufficiently to be lamented ignorance of almoſt all Midwives) a man could not ſpeak, who hath by nature ſpeech given to him as his proper faculty, without any help of any foolish woman to aſſiſt her. And I ſaw a childe new born, whileſt he was kept in longer then he might ſtay for the ſecondines, he neither cried nor felt any trouble; but after that the Midwife unwiſely cut the ſtring of his tongue with her nail, he preſently fell to crying for pain that he endured: But this is the ſmalleſt matter, that truly is of moſt concernment, namely, that becauſe of that cutting with the nails, oft-times infants

fants cannot lay hold of the nipple of the mother or nurſe, nor yet ſuck the milk, but die for want of it; or elſe breaſts ſwell that give ſuck, or which is yet far worſe, the parents impute the fault hereof either to hard labor in childe-birth, or coming before the time, or elſe to the weakneſs of the childe only to lay hold on the nipple, or to any other cauſe, rather then to the fault of the Midwife; which being it is the true cauſe, I much wonder that there is not a proviſional Law made to hinder the death of children, which is oft-times procured by Midwives: wherefore I admonish you, that you forbid Midwives to touch the tongues of yours or your friends children with their nails. And if perchance that ſtring under the tongue be greater then it ſhould be, it may be cut at any age, which yet ſeldom, and very ſeldom indeed, happens to this ſtring; becauſe Nature would not have made man fit to ſpeak, unleſs she had made and granted unto him fit inſtruments for that purpoſe: And if of an hundred thouſand children one child is born with a greater ſtring, where manual operation is needful, there is no difference whether it be cut preſently, or after delivery, or after the childe is weaned, or in longer time, ſo it be done by a skilful Chyrurgian. If this happen, we uſe to command the Patient to put his tongue beyond his teeth, which *Celſus* indeed laies hold on with the toothed part of the pullers, but we do it with the pincers; ſometimes we cannot lay hold of the tongue either with pullers or pincers, as in infants and children, who either will not or know not how to put forth their tongues; for theſe we muſt make them cry; then putting a thin and rugged linnen cloth between two fingers, namely the fore-finger and thumb of the left hand, whereby the tongue muſt be laid hold on and pulled forth, and may be pulled upwards and laid crooked, that the ſtrings may appear, which after this we muſt cut with the right hand: And taking (not the lancer commonly uſed by the Barbers, unfit for that purpoſe) but the penknife that is moderately hooked about the point, we cut the ſtring of the tongue, if it be greater then it ſhould be, overthwart, once, twice, and again, until it be all cut, taking great care that the veſſels under it be not hurt, which cannot happen where the Chyrurgian is skilled in Anatomy, who knows exactly the veſſels under the tongue, and avoids them with the crooked knife. Thus far *Hier. Fab. ab Aquap.*

Fig. IX. teaches how a fish-bone, or a bone with corners, or any thing elſe ſticking in the throat, whileſt we eat, and not going down into the ſtomach, may be drawn forth with convenient Inſtruments, or elſe forced down into the ſtomach: Theſe ſtrange things

things are drawn forth divers waies; if they lie in ſight, they are laid hold on with the right pullers, Table IV. Figure I. and are pulled out of the throat, putting in the *Speculum oris* in the mean time; and if a thorn or bone, or any other things, when the mouth is open, and the tongue is preſſed down by the *Speculum oris*, cannot come to be ſeen, when they are ſunk down deeper into the throat, then being laid hold on with the crooked pullers, Table X. Figure I. they muſt be drawn forth with the Inſtrument, Table X. Figure II. thruſt into the throat, and hitting againſt them. Others after meat provoke the ſtomach to vomit, putting their fingers, or feathers anointed with oil of ſweet Almonds, into the throat, that together with the meat, a thorn, or any ſtrange thing, may be caſt out of the mouth. But ſince oft-times the putting forth of bones and thorns is in vain attempted by the ſaid waies or Inſtruments, *Hierom Fabrit. ab Aquapend.* takes a candle of white wax, as great as a mans little finger, and ſomewhat crooked, which he delivers to the Patient, that he may thruſt that into his own throat, untill ſuch time as the ſtrange bodie may, being forced, go down into the ſtomach.

Others for the ſame purpoſe command us to ſwallow down great gobbets; ſome tie a leaden bullet faſt to a thread, and they ſwallow this often, and pull it forth again, and ſo what ſticks faſt in the throat, is thruſt into the ſtomach; when any thing ſticking in the throat can neither be taken forth at the mouth, nor forced down into the ſtomach, *Fabrit. ab Aquap.* from *Paulus* and *Leonides*, leaves the whole buſineſs to nature and time.

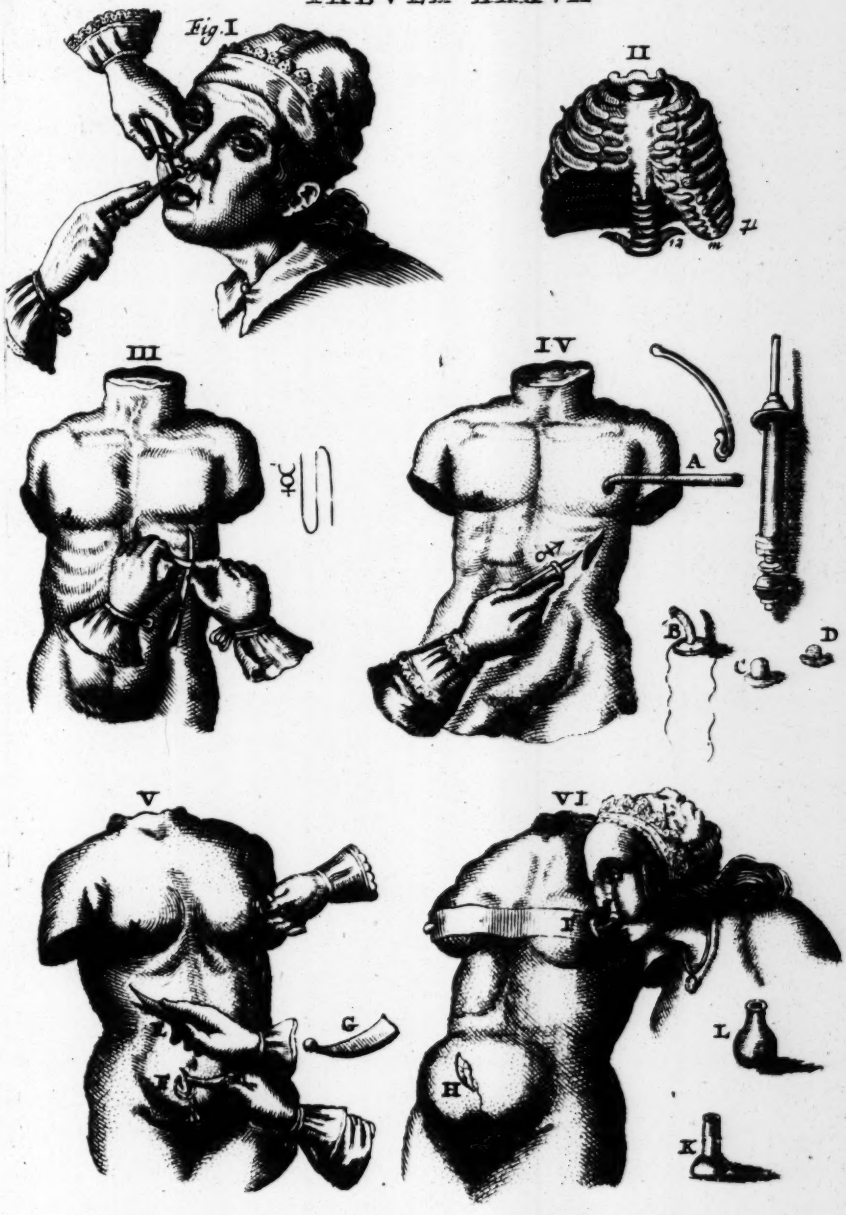
The XXXVII Table.

Of cauterizing the noſtrils for ozæna, and chiefly after the cutting forth of a Polypus; and of Paulus *and* Hippocrates *his way of ordering Paracenteſis in the Thorax; of the dilating and curing wounds of the Thorax, breſt and Abdomen, and to bring forth the nipples of ſuch as give ſuck.*

FIG. I. teaches how the noſtrils ulcerated onlie, or where there is alſo corruption of the bone, are cauterized by hot burning irons thruſt through pipes. To this join thoſe things which were

ſpoken

TABVLA XXXVII



ſpoken before, Table IX. Figure III, IV, V and VI. I cured a Tailor at Padua who kept the houſe by reaſon of an ozæna from the French pox, which after the inward uſe of the decoction of *gnaicum*, for two whole years was dreſſed by a principal Barber of that place, with medicaments prepared with Antimony and Mercury. But when theſe could do no good, the Patient by the Chyrurgian ſought the advice and help of D. D, *Spigelius*; but *Spigelius* at that time was ſick and could not go forth to ſee the Patient, wherefore he joined me with that Chyrurgian in ordinary, and he commanded me to make a tent of fine lint. and that I ſhould thruſt that into the noſtril that was ill, and that I ſhould leave it there for a natural day, that ſo we might learn the ſcituation, quantity and quality of the ozæna; I obeyed his command and pulled forth the tent, which I found near the point, and on the right ſide, foul with a round ſpot, and ſtinking exceedingly, and I ſhewed this to *Spigelius*, who ſo ſoon as he ſaw this, ſaid that the ulcer was in the ſupream part of the noſtrils; namely upon the griſly part, and that on the right ſide not very great, but it was join'd with corruption of the bone, which required cauterizing. When I asked him the reaſon of what he had ſaid, he gave this which follows; becauſe the tent is foul almoſt at the point, the ulcer hath its ſcituation in the top of the noſtril; and becauſe the tent is only ſpotted outwardly, of neceſſity the left ſide only is affected, yet with no very great ulcer, becauſe the ſpot is ſmall; but the bone is alſo corrupted with it, becauſe the tent is black and ſtinks exceedingly; there is need of manual operation, becauſe for ſo long time, untill now, ſuch medicaments have been applied in vain, which had not the bone been corrupted alſo, would have brought the ulcer to cicatrize long ſince. He left this manual operation or burning the noſtril through a pipe unto my care, as being very eaſie and the firſt of my manual operations; wherefore I choſe a pipe (for *Spigelius* had divers) fit for the purpoſe (namely that which had a hole in the ſide, deſcribed Table VII. Figure IV.) and I wrapt that in lint preſſed out with ſharp black wine to defend the parts that were ſound; this I thruſt into the noſtril that was ulcerated, that the hole of the ſaid pipe might equal the ulcer; the pipe being thus prepared and thruſt into the noſtril, I took the iron inſtrument, Table IX. Figure VI. made very red hot, and this I thruſt through the pipe unto the place affected, and

and I drew the ſame preſently forth again; and thus I did pulling the red hot iron out, and putting it in again, four or five times at the moſt; *but I did this very ſuddenly, and therefore two red hot irons are requiſite, as I admoniſhed in the place quoted.* After cauterizing, Nature, (the pain being firſt abated, and the eſchar taken off) being helped by medicaments, ſeparated the ſcale from the bone in fourteen daies; and the ulcer, with drying things applied to it, was brought to cicatrize.

I tried this manual operation afterwards, in many, with happy ſucceſs (though the Germans, and chiefly thoſe of Ulma, do exceedingly abhor all cauterizing by fire) alwaies cloſing both the Patient's eys with cotton and a band over it, to hinder them from the ſight of the red hot iron.

An Ozæna of the noſtrils be it with or without ſuſpicion of the French Pox, but without any rottenneſs of the bone, if it cannot be cured with medicaments, requires a pipe that is all ſolid, Table IX. Figure V. which, to ſpeak the truth, I never uſed my ſelf, neither did I ever ſee any man elſe do it. But a certain Student of Millan told me that *Hierom. Fabrit. ab Aquapendente*, did with moſt happy ſucceſs cauterize him with a red hot iron thruſt through a pipe that was all ſolid.

Without doubt the way he went was that which the Authour his ſelf deſcribes. An iron pipe muſt be thruſt in (that is all ſolid, Table IX. Figure V. not wrapped up in lint, but ſmeared over well with the white of an Egg beaten together) it muſt be ſo long that it may equal the length of the ulcer, and the hollow of the noſtrils may be equalled by it; and through this muſt a red hot iron be thruſt which ſhall touch nothing but the pipe. It muſt be ſo done that the red hot iron may heat the pipe, and the pipe the noſtrils and the ozæna; yet I deſire not that the noſtrils ſhould feel any pain by this heat, but that the place ulcerated might be healed without feeling any pain, as hot only as the Patient can well indure it; when you find that, then muſt the pipe preſently be pulled forth of the noſtrils, and then thruſt in again; and ſo often muſt the red hot iron be thruſt in and pulled out, which may only heat untill ſuch time as the part is ſufficiently tried; for by often doing of it, and the heat renewed ſtill without pain, ſupplies the room of cauterizing, namely by drying and corroborating the part, and digeſting the tumours, and ſo healing the ulcer.

Fig. II. ſhews the ribs of the Thorax laid bare, that young Chyrurgians may better underſtand what is ſaid underneath concerning the perforation of the Thorax; wherefore (♀) ſhews *Paulus* his place, and (☉) the place ſomewhat lower then *Paulus* uſed, and (♃) ſhews *Hippocrates* his place; for in theſe places mentioned the Thorax uſeth to be opened for all ſorts of impoſtumes.

Fig. III. (☿) ſhews a threefold thread, wherewith *Paulus* his place, and the place beneath it is found: (♄) ſhews the inciſion of the skin alone, above the muſcles between the ribs; and this is done only with the inſtrument called the Woodcocks bill.

Fig. IV. ſhews 1. How in wounds of the Thorax that penetrate into the cavity, the blood is drawn forth by a pipe (deſcribed A Table XII. Figure IX.) 2. What pipe is neceſſary after the cutting of the Thorax (♂) (B Table XII. Figure XII. &c.) a ſilver cap (Table XIII. Figure VIII.) a ſponge (D) and a ſyringe muſt be uſed for the caſting in of convenient liquors into the Thorax, (☾ Table XIII. Figure II.) 3. How the Thorax muſt be perforated, and what we muſt do after we have opened the Thorax either as *Paulus* or as *Hippocrates* teacheth us. But before we open the Thorax four things muſt be conſidered: 1. Whether we ſhall uſe manual operation or not? 2. At what time. 3. In what place. 4. After what faſhion. Four things will ſignifie whether it be to be done or not? 1. The diſeaſe. 2. The time of the year. 3. The forces of the Patient. 4. The greatneſs of the diſeaſe; namely whether much matter muſt be voided forth.

1. The Diſeaſe if it be in the cavity of the Thorax, ſo that either corruption run forth of the wound into the Thorax, from ſome impoſtume of the Lungs, or from a Pluriſie, or cholerick matter from an Eryſipelas of the Lungs, or a watry humour from a Dropſie of the Thorax, or bloody moiſture like to the waſhing of raw flesh or blood: we know this collection of matter; Firſt by breathing, which is only difficult in drawing in the breath; becauſe the Lungs, by reaſon of the matter collected, cannot dilate themſelves; but not when we put forth our breath, when the matter by its weight preſſeth the Lungs. Secondly, from the Pulſes, that are more quick, vehement, frequent, ſmall, unequal, unordinate. Thirdly, by a Feaver going

ing

ing before, with more vehement accidents. Fourthly, by the difficult lying on the sound side, because the faulty matter lieth upon the Lungs, which burthens them that they cannot move freely here and there. Fifthly, from a waving up and down, perceived to be in the hollow of the Thorax. Sixthly, to these we may add a cough, which yet is not alwaies present in every impostume of the Lungs; but only then when the matter is contained in the pipes of the Lungs, which provokes the inward coat of the sharp Artery, and the head of it (parts that are of exquisite feeling) either by the quantity or acrimony of it, and so makes a man cough.

II. The time of the year; *Hippacrates* bids us avoid the Winter and Summer Solstices, because in those times there is made the greatest and almost sudden change of the Air; or else when alwaies after incision made, some air passeth into the Thorax; but especially when the matter comes forth by the newly made wound, the aforesaid times must be avoided as much as possibly may be.

III. The Forces: For unless the forces stand firm or moderately good, this manual operation must be omitted for a time, lest this noble remedy of opening the Thorax otherwise, might be defamed by the death of the Patient. Now Physicians commonly measure the Patients forces by the Pulses, which yet in this case may deceive them, because such matter collected in the Thorax maketh the Pulses small, quick, frequent and unordinate; but the most certain sign of forces remaining, is when the sick can sit or walk by the help of natures strength, or with the help of a staff.

IV. The Quantity: for if there be but a small quantity of matter in the Thorax, we have no need to open it, for nature will either digest it, or else send it forth by the urinary passages, or some other waies, but if there be much matter, we must presently without any delay fall to make incision, lest the sick should be choaked with quantity of matter, or the Lungs should be corrupted with the ill quality of it.

But at what time? *Hippocrates* seems to have intimated that unto us, *Lib. 6. epid. sect. 7, text. 9.* we must presently open those whose Thorax is hydropical; but we must presently cauterize, with hot irons, those which are in Consumptions. Interpreters have interpreted both words, θάεγον and ἀντίκα to sig-

nifie preſently; but ὀλίγον here, ſignifies leſs; as if *Hippocrates* had ſaid, that thoſe that are hydropical muſt not be ſo ſoon opened or cauterized; but thoſe that conſume muſt be preſently opened or cauterized. The reaſon is, becauſe where men are hydropical, the matter is collected in the Thorax by little and little, and therefore there is no need to make inciſion preſently at the beginning; for ſo at length that collection will do hurt when it is in great quantity But ſuch as are in Conſumptions, having impoſtumes in their Lungs, do as it were at one time collect all the matter when the impoſtume breaks, wherefore the Thorax muſt be preſently opened. 1. That the Patient may not be choaked by reaſon of the dilating of the Lungs, hindred by the quantity of the corrupt matter. 2. Leſt that from the corroding corruption, any ulcer ſhould breed in the Lungs or other part of the Thorax, which can hardly, or not at all, be cured afterwards.

In what place? The place muſt be ſuch wherein inciſion may be ſafely made; now the places are many, before, behind, on the ſides, above or below; but neither before nor behind is the opening of the Thorax good or ſafe, by reaſon of the muſcle of the breaſt, and the muſcles of the back, which are full of nerves, which are very dangerous to be cut; wherefore it remains that the opening muſt be made on the ſide, and that below or above, for on the ſide the muſcles do not ſtick ſo faſt to the breaſt, yet before ſometimes; namely on the region of the Sternon; if the matter be collected between the *mediaſtinum*, apertion is wont to be made. Wherefore *Paulus lib.* 6. *cap.* 4. opens the Thorax in the upper part of the ſide: But *Hippocrates lib.* 2. *de Morbis*, in the lower part. In the upper part between the fifth and ſixth rib, counting from above; (Table XXXVII. Figure II. (♀:) in the lower part, between the third and fourth rib. counting from the lower ribs (Table XXXVII. Figure II. (♃.)

Paulus found his place by numbring the vertebraes of the Thorax, beginning from the uppermoſt, between the fifth and ſixth vertebra, he puts a thread on the point of the *ſpina dorſi*; and he brings it to the middle of the *ſternum*: then he takes the third part of the thread, which he meaſureth from the *ſternum* to the *ſpina dorſi*; and whither the end of the threefold thread reacheth, that place he marks with ink; which being ſo marked makes a right and perpendicular line with the nipple of the breaſts (Table XXXVII. Figure III. ♀.)

Hippocrates openeth the breaſt between the third and fourth rib, coun-

counting from the lower ribs; and the reaſon is, becauſe by this means the matter and other things contained in the Thorax will run forth the better; and he chuſes the place where there is that eminence and binding of the ribs, to which the muſcles grow; but not upon it, or backwards towards the back, becauſe the nervous muſcles there, hinder the opening of that place; but it muſt be done a little forward, or toward the Sternum; (Table XXXVII. Figure II. 2) There ſeems indeed in this place to be danger, by reaſon of the Diaphragma, leaſt that ſhould be hurt; yet there is no danger, becauſe the Diaphragma, where it ſticks to the ribs, doth not riſe ſo high, (for it is kept down by the matter) that it cannot be hurt; but where the matter is collected, there we muſt attempt to open the part. If it be on the left ſide, let the Thorax be opened on the left ſide; if it be on the right ſide, open on the right ſide; if on both, open both ſides. But of theſe places mentioned, that of *Hippocrates* is to be choſen; becauſe the corruption of ſtrange matter collected in the Thorax, by reaſon of the more declining ſituation of the part opened, will come forth better then it will where *Paulus* appoints the orifice to be made; yet this is not ſimply to be deſpiſed, for if the matter be more diligently conſidered, and the orifice be to be made on the right ſide, the place *Paulus* appoints is better then the place of *Hippocrates*; becauſe on the right ſide, the liver with its gibbous part drives the Diaphragma upward; but on the left ſide the place of *Hippocrates* is beſt made choice of, becauſe the Diaphragma, by reaſon of the more low ſituation of the ſpleen, and plenty of matter, may be thruſt down towards the lower parts; wherefore *Hippocrates* ſaith, *L. 2. de Morbis*, It were to be wiſhed, that the matter would alwaies lie down on the left ſide to be evacuated, or lower then *Paulus* his place, namely, between the ſixth and ſeventh rib, (⊙ Table XXXVII. Figure II.) for the Diaphragma doth not aſcend ſo high in thoſe that are living, as in thoſe that are dead; wherefore in theſe places, the Thorax is opened without offence done to the Pericranium, Lungs, or Septum Tranſverſum.

But the way is this; The opening of the Thorax is performed either by inciſion, burning or perforation. *Hippocrates* makes mention of inciſion and burning, *Sect. 7. Aph. 47.* when he ſaith, Whoever are impoſtumated, muſt either be burnt or cut, &c. but he ſpeaks of cauterizing, *L. 2. de Morbis*. In all theſe three waies, we muſt conſider the Patient's lying down, his breathing, the inſtruments and the operation. After his lying down, both the

body and arm of the Patient, on that ſide muſt be opened, muſt have a middle figure, that the muſcles be not contracted too much; wherefore in *Paulus* his way, let the ſick lie on his back, but in *Hippocrates* his way upon his belly. As for his breathing in *Hippocrates* method, the Patient muſt breathe out, that the Lungs may fall down; but in *Paulus* his method, he muſt hold his breath, that the Diaphragma may be thruſt lower. The inſtruments vary, and the waies of operation are divers. For inciſion *Hippocrates* uſeth a sharp knife, deſcribed Table II. Figure I. and that inſtrument which is called Spatha, but *Paulus* opens the Thorax with a Woodcocks bill; namely, with a long little ſword, and ſomewhat crooked at the point, (Table XII Figure I.) but the new Practitioners uſe both knives. For cauterizing *Hippocrates* uſeth a long iron inſtrument, and not very thick; becauſe that after cauterizing, the hole may be made larger then the thickneſs of the inſtrument was; *Hippocrates* alſo perforates the ſide with a hollow piercer, made with a ſcrew fashioned, (not one that is ſolid, ſuch as Coblers uſe when they make holes in shooe ſoles to draw their threads through.) Theſe three operations muſt be uſed according to the diverſity of the matter contained in the Thorax; for ſince one kind of matter is thick, and another is thin, that requires a greater hole to come forth by, and this a leſſer; wherefore in thick matter, when the corruption is collected, inciſion muſt be made; but where the matter is thin and watry, as where there is a dropſie of the Thorax, *Paulus* and *Hippocrates* both think that the breaſt muſt be opened, either by burning the muſcles or perforating the ſide. The latter Practitioners prefer inciſion before cauterizing or perforation, which they make leſs for a dropſie of the Thorax, and greater for an Impoſtume, and greateſt of all where there is a collection of phlegmatick matter. Inciſion of the Thorax is performed thus; The place being found, and noted with ink, the ſick muſt be placed in a middle poſture; then with a pen-knife (Table XII. Figure I. and of this Table Figure III. ♄.) it muſt be cut oblickly toward the ſuperior and inferior parts; then the pen-knife, (Table II. Figure I.) bound about with a white wollen cloth, (ſo that the point at the top of it may ſtick forth no more than the breadth of the nail of the great finger, leaſt being thruſt in deeper then it ſhould, it may do any hurt) being applied to the outward muſcles between the ribs, muſt be thruſt in by little and little by degrees, untill it penetrate into the hollow of the Thorax, (of this Table Figure IV. ♂.) But if this wound, beſides

ſides our expectation, be too narrow, and the matter too thick: then either it muſt be dilated with a pen-knife (Table XII. Fig. I. and of this Table Figure V. E.) which cannot hurt the Lungs, by reaſon of the obſtacle placed at the end of it; or elſe to make the matter more liquid, honie and water muſt be caſt into the Thorax by a Syringe, of this Table Figure IV. (C) inciſion being made, the matter contained in the Thorax muſt be let out, (yet not all at one time, leaſt the Patient's forces fail, or ſomething worſe ſucceed it; if we would let it all forth at once, then nature, which is accuſtomed almoſt to the matter collected, will feel ſome vacuum, to avoid which, ſhe will ſend all the humors almoſt in the body for a ſupply, whence there will ariſe a greater Impoſtumation then there was before) daily ſix ounces, or as much as the Patient's forces will ſuffer. This quantity of matter being let forth, the wound muſt be ſtopped every day with a tent made of hards, or raw flax, and tied by a thread untill the tenth day, when almoſt all the matter is let out; for five daies wine and oyl warmed, muſt be poured in by a pipe, (of this Table Figure IV. C) that the lungs which are uſed to be moiſtned, ſhould not grow dry ſuddenly. Then a ſilver pipe (of this Table Figure IV. B.) muſt be put in, that the liquor poured in morning and evening may be let forth, (for that which is poured into the Thorax in the morning, will come forth by the evening; and what is poured in at evening, will come forth by morning) After the fifteenth day that inciſion hath been made, inſtead of a ſilver pipe, put in a tent of lint ſmeared with white wax, hollow, leaſt the wound degenerate into an incurable fiſtula, or the matter remain in the Thorax. When the Thorax is wholly dried, put in a hollow tent of lint, made up with wax, that for length and thickneſs muſt daily be made leſs, untill ſuch time as the wound filled with flesh may be covered with a cicatrize. But where the matter is watry, or thin corruption, preſently after that the Thorax is opened, a pipe muſt be put into the hole, that fits it exactly; and into the pipe a tent tied to a thread, that the water or thin corruption may not run forth all at once, and the ſick die, (as *Hippocrates* admoniſhes *Sect. 6. Aph.* 27.) but that ſo much of the matter only may be let forth, as the Patient's forces can ſuffer. But if by reaſon of the coldneſs of the Ague, or any other cauſe, it be not convenient to let out the matter once or twice a day, we muſt put a ſmall ſponge into the pipe, found in this Table Figure W. D. and the ſmall cap (of this Table W. C) muſt be put upon it, that the

matter almoſt every moment may ſweat through the holes of i by degrees, and without any loſs to the Patient's forces.

Fig. V. repreſents the dilating of wounds of the Thorax, and of the Abdomen, which muſt be performed with ſharp knives.

A wound upon any part of the Thorax, either penetrates and perforates the Pleura, or it doth not penetrate nor prick that: Again, it is either a narrow wound or a broad; and both of theſe either with hurt done to the parts within, or with no hurt done to them.

A wound of the Thorax received below the ſixth rib, and penetrating into the cavity, and not hurting the inward parts, yet is broad enough, it muſt never be ſtitched or cured by the firſt intention, leaſt the paſſage for the matter to come forth, which is run into the hollow of the Thorax, may be ſtopt up, with danger to the Patient's life; but firſt a tent muſt be put in, made of raw lint, tied to a thread, (leaſt when the breath is drawn in, it be ſuckt into the Thorax) and wet in ſuch things as ſtop blood, that the wound may remain open; on the ſecond and the daies following, the wound muſt be digeſted with a tent made of a linnen cloth a little worn, and anointed with medicaments that move corruption; and it muſt be kept open, that the matter collected within may freely come forth.

And if the matter collected in the Thorax be groſs, and not fit to come forth by the wound, it muſt be attenuated by injecting lotions for ſome daies, made of the decoction of Barly, Raiſins, and Hony of Roſes, and a ſilver pipe muſt be put into the wound, (of this Table Figure IV. B) anointed with a digeſtive, and ſtopt with a ſponge, (of the ſame Table Figure IV. D) and covered with a little cap C, of the ſame Table, that the matter and the decoction caſt in may be purged forth by little and little; when the corrupt matter is conveniently purged forth, inſtead of the ſilver pipe with ſhoulders, a tent muſt be put in made of waxed lint, and hollow, and wet with a ſarcotick medicament, which muſt every day, as I ſaid before, be made leſs and ſhorter, that it may not hinder the breeding of the flesh; when the ſaid wound is narrow, it muſt be preſently dilated with the ſharp knife, (E of this Figure) to let forth the matter. A wound piercing in above the fifth rib of the Thorax, be it large or narrow, muſt be kept open with a tent wet in deſiccating medicaments, and tied by a thread, that the ſame day or the next, the blood which is not yet congealed in the Thorax, may be let forth by a pipe put into it, of this Table Figure IV. A.

But

But if the matter, by reaſon of its thickneſs or higher ſcituation of the wound, cannot come forth by this pipe, we muſt in time propound the opening of the Thorax; and when the Patient, or his kinsfolk that ſtand by, yeeld unto it, it muſt be done after the manner delivered more at large in the explication of the Figure III. and IV. of this Table. This help of manual operation being not preſently admitted; when the matter cannot run forth by the hole, either of it ſelf broad enough, or in vain dilated with an inciſion knife, we muſt try, foreſhewing the danger of the Patient's life, to void it forth by diureticks given at the mouth, rather than to expectorate it by lohoſtes.

In wounds of the Thorax with a ſmall inciſion of the Lungs or Diaphragma in the fleſhy part, we muſt not only attempt to drive out the matter by the wound, either of it ſelf large enough, or dilated by an inciſion knife, or by ſome new hole made, or by the urinary paſſages; but we muſt pour into the Thorax, by a ſyringe, firſt a decoction that binds the bleeding veins: Secondly, one that attenuates the thick matter: Thirdly, one that cleanſeth the inward wound: And laſtly in the fourth place one that will heal it.

When a wound pierceth into the Abdomen, the caul or the inteſtines ſlip forth; if the caul be ſlipt forth, we muſt conſider whether it be yet ſound or corrupted; if it be ſound, then it muſt be preſently waſhed in hot wine, and be gently put in again with ones fingers; then the lips of the wound muſt be drawn together again till they touch one the other; and being ſo drawn it muſt be kept ſo with ſtitchings, deſcribed Table XXXIX. Figure V. But if the Siphac be corrupted, it muſt be drawn forth, and muſt be tied very ſtrongly with a ſingle red ſilk; and then the part that is corrupted, that is bound, muſt be cut off above the thread, with a ſharp knife; but the reſt which is ſound muſt be waſhed in hot wine, and muſt be gently reduced into the Abdomen, the long thread hanging forth without ſide; then the wound muſt be joined with ſutures now mentioned; yet ſo that ſome ſpace may be left where the thread hangeth forth: but if the Inteſtines be come forth, they muſt preſently, before they be filled with wind, be thruſt in again gently with the fingers, without violence, and ſo be hid under the Abdomen. If the hole or wound of the Abdomen be narrow, and the inteſtine is fallen forth, and by long ſtay-

ing

ing without the belly, by the cold air coming to it, it be filled with wind, and ſo ſwoln that it is impoſſible to put it in again with our hands, then let it be long fomented with a ſponge wet in hot wine, and preſſed forth again; or with a bundle of raw flax boiled in a ly that is ſharp, that the winds may be diſperſed; then let it be reduced, and let the wound of the Abdomen be ſtitched up as it ought to be. If by this means the inteſtine cannot be reduced, the wound muſt be dilated with a knife, called *Syringotoma*, (G and F) that the inteſtine may be let in, and the wound, dilated according to *Galen's* rule, may be ſewed up again.

Fig. VI. H. But if under a wound that pierced into the Abdomen, the inteſtines be wounded by cutting, then they muſt be gently drawn forth, and ſewed the ſame way that Furriers ſew their skins, leaving behind a piece of the threak ſpun from flax, that it may hang forth without the wound of the Abdomen; after that let them be waſhed with warm wine, and be gently put back into their own place. Laſtly, on the ſutures of the guts put in again, you muſt ſtrew powders of Frankincenſe, Maſtick, Pellitory of Spain, &c. and the wound of the Abdomen muſt be united with latchets.

The nipples of thoſe that give ſuck (I) are oftentimes ſo hid within the breaſts, that the Child new born can neither take hold of them with its mouth, nor ſuck any milk out of them. In ſuch a caſe let either the childs nurſe ſet either the bottom of the glaſs (pictured Table XVI. Fig. I.) to the nipple that lies hid, and lay hold of the mouth of the pipe with her mouth, and draw forth the nipple by ſucking; or one that is of years ſhall ſet the long glaſs (K) to the nipple, and with a band ſhall bind it faſt to the breaſt; and when this is done, let her take the narrower end of the glaſs between her lips, and drawing as before, let her ſuck forth the nipple that lieth hid. *Amatus Luſitanus* filleth a glaſs with a narrow mouth L with ſcalding water, which he poureth forth again when the glaſs is made very hot with it, and he preſently claps the mouth of the glaſs to the nipple; for this preſently ſticks faſt to the nipple, and draws it out ſo forcibly, that the Child may eaſily lay hold of it with its mouth. Moreover theſe inſtruments not only draw out the nipples, but milk alſo. But if there be no need to draw forth milk with the nipple, a thumb-

ſtall

ſtall made of Ivy wood, is moſt ſafely ſet on to draw forth the nipples.

The XXXVIII Table.

Of the cutting off of a breaſt with an ulcerated Canker in it; of the perforation of the bottom of Fiſtulaes creeping under the ribs; of Celſus his way to bind the navil, and of a girdle for the navil.

Fig. I. repreſents a breaſt affected with an ulcerated Canker, the baſis whereof is thruſt through with two needles (Table XII. Figure VIII.) drawing after them a twiſted flaxen thread.

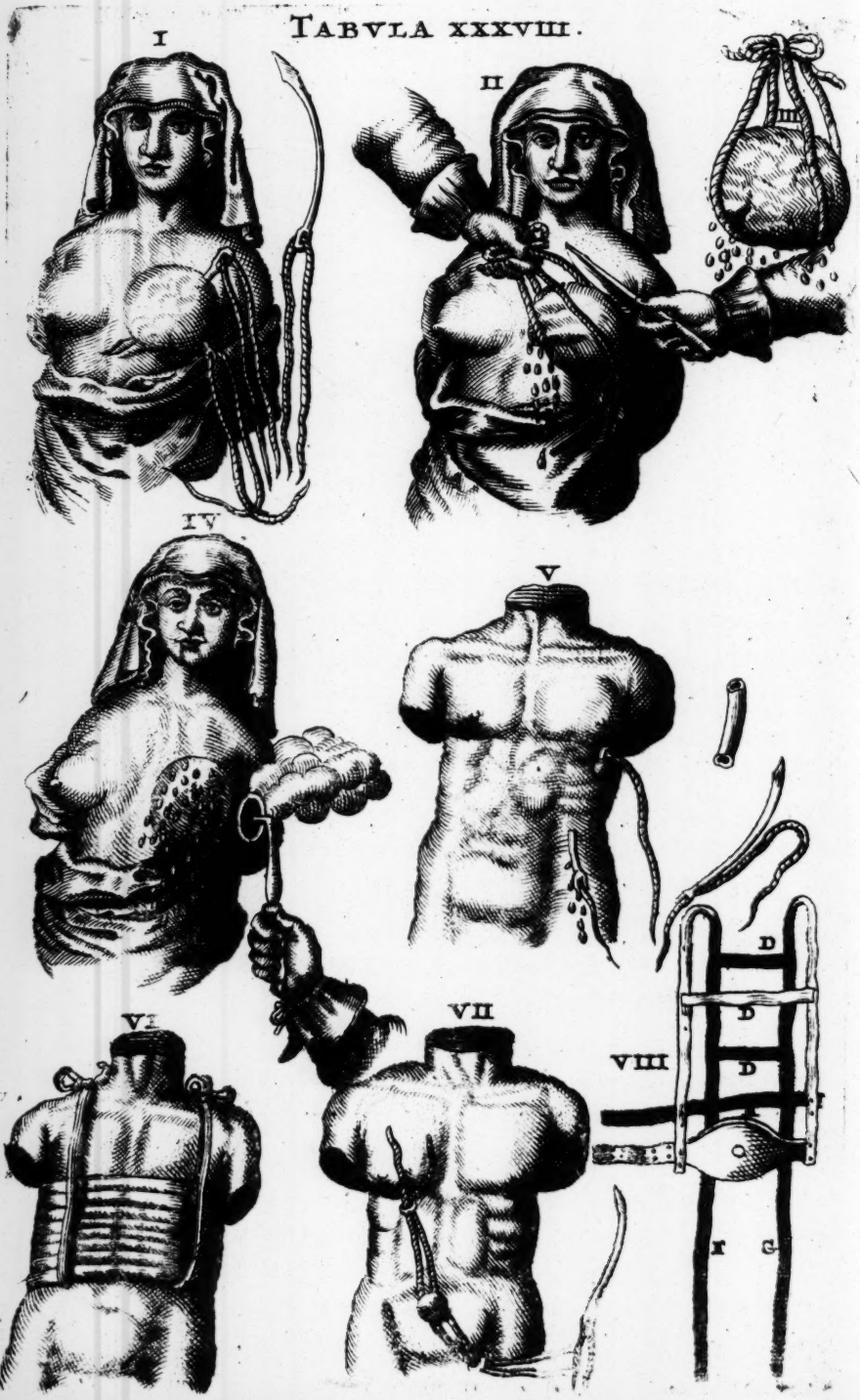
Fig. II. ſhews how the Chyrurgian takes hold, with his left hand, of the ends of the threads that were thruſt through, and with his right hand he takes the knife, Table XII. Figure VII. and with that he cutteth the Canker out by the roots.

Fig. III. ſhews a Canker cut from the breaſt, weighing ſix Phyſical pounds.

Fig. IV. ſhews how the Chyrurgian, after the cutting off of a breaſt ulcerated, doth lightly cauterize the place with a red hot iron, (ſee underneath a ſingular Hiſtory) at leaſt to corroborate the part,

Fig. V. is the inſtrument of *Hierom. Fabritius ab Aquapendente*, wherewith a Fiſtula of the Thorax is perforated, which, from the ſpace above between the ribs, doth inſinuate it ſelf under one or two ribs or more; namely between the Pleura and the ribs, untill ſuch time as it ends in ſome ſpace of the ribs underneath. The point is thruſt into a ſilver pipe that is crooked (*a*) as far as the bottom of the Fiſtula, that it may look outwards; then through the pipe thruſt into the Fiſtula a long needle is forced (*b*) which far from the point hath an eye and carrieth a thread with it, that the bottom of the Fiſtula may be perforated, and the thread may come forth at the upper and lower end of the Fiſtula; when the bottom of the Fiſtula is perforated, let the needle be taken forth by the new hole made in the Fiſtula, and let the ends of the thread be tied together, that the holes of the Fiſtula

TABVLA XXXVIII.



Fiſtula may be kept open, and the corrupt matter may run forth beneath, untill ſuch time as this Fiſtula under the ribs may be either filled up with flesh, or be made grow toge her. Concerning other Fiſtulaes of the Thorax, ſee underneath Tab. XXXIX. Figure IV.

Fig. VI. is *Soſtratus* his band, which is moſt convenient where the breaſt is affected with any diſeaſe that requires binding. *Galen lib. de Faſciis, cap* 81. deſcribes this; it is moſt convenient where we deſire to bind the middle of the breaſt, or the back, or ſides, or Thorax; *eſpecially for a wound of the Thorax, or fracture of the ribs:* wherfore we caſt two ſmall bands, three fingers broad, and of a fit length, over the upper points of the ſhoulders, and we ſuffer the two right ends of them to hang down; then with the band folded together, or with one end we bind the whole Thorax, and the ſides that they may be covered; and we tie the end of the band with a knot; but the ends that hang down both before and behind, are to be ſewed to the circumvolutions of the band; and if they be too long, we turn them upwards and there gather them together where the throat is join'd with the broad bone of the ſhoulders.

Fig. VII. ſhews how *Celſus* cured the ſticking forth of the navil by manual operation. The body of the Patient being laid upwards (that whether the inteſtine or the caul, or both be ſlipt forward by the navil oftentimes dilated, it may be put in again) he takes hold of the navil with a pair of pincers, and draws it to him, and he paſſeth quite through it, at the baſis, a needle that draws after it two ſingle ſilk threads uncoloured; then he cuts off the threads, by the needles eye, with a pen-knife, and tying together the ends of both the threads, he binds the root of the navil, lifted up, very ſtrongly; that the part of it, above the band, may die and fall away. Yet becauſe the ſick will not ſo eaſily admit of the ſaid manual operation of *Celſus*, there is a more gentle way found out by *Hierom. Fabrit. ab Aquapend.* which I have often proved, which he performs with a medicament and a truſs of the following figure.

Upon this occaſion I thought fit to inſert, not undeſervedly, a moſt rare relaxation of the navil in an infant; and a preternatural falling forward of the inteſtines hanging forth of the body, by reaſon of a ſudden impreſſion from the Mothers imagination; which I received the 14. of *January*, *Anno* 1643. from the moſt famous

famous Doctor, *Dr. Iohan, Georg Cocklius*, ordinary Phyloſopher to our Republick, and diligent Phyſitian, and my moſt honored Colleague; A certain Countrey woman of Berenſtate, (ſo the words were) in the juriſdiction of *Vlna*, wife to *Iacob Hicker*, in the time of harveſt before, but in the firſt months of her being with child, whileſt she followed her buſineſs in the Country, and gathered the gleanings of corn that were ſcattered up and down the field, under one of them she ſuddenly perceived a heap of vipers creeping, and clapping her hand upon her navil, she did ſo ſtrongly imagine concerning their motion and shape, that although she was well all the time she was with childe, yet yeſterday about twilight in the evening, she brought forth a daughter, chriſtened preſently by the name of Barbara, and lively in all other reſpects; but by reaſon of that imagination imprinted in her, she was not well formed; for all the inteſtines of this childe, which naturally otherwiſe, should be hid in the lower part of her belly, here preternaturally, by reaſon of the navel relaxed, ſtuck without the body, as hid in a great wallet, and were covered only with the peritonæum, and ſo were apparent to be ſeen; which moreover, being now placed out of the belly, (and wanting the natural and preferring heat) were hurt by the cold air that came to them, (and ſo bound up) that neither by the help of a warm ſtove, nor by warm clothes, nor yet by any help of the Phyſitian, could be kept in their natural ſtate; wherefore two daies being paſt, the next Lord's day, having ſcarcely ſeen the world, she departed to the place of the bleſſed.

Fig. VIII. A. is a truſs for the navil, made of a double cotton linnen cloth, which on that part E, which covers the navil, was a buckler, made like to a hard cake, in the centre whereof there was a little round knob of lint wrapt together, which goes into the dilatation of the navil, that it may hinder the inteſtine or caule, or both to come forth again; but firſt there muſt be laid on a binding cerat, ſpread upon ſoft leather, after that, the truſs being applied, the Abdomen muſt be bound; ſome to the girdle for the navil A, add the bands to paſs over the shoulders B C, which muſt be faſtned together with three overthwart ſtraps D, and ſo they faſten the girdle of the shoulders that it may not fall down, but may ſtick faſt upon the region of the navil; but they are not neceſſary, becauſe the hanch bones hinder the girdle to fall downwards, and the ſtraps underneath F, G, will not let it riſe upwards.

The

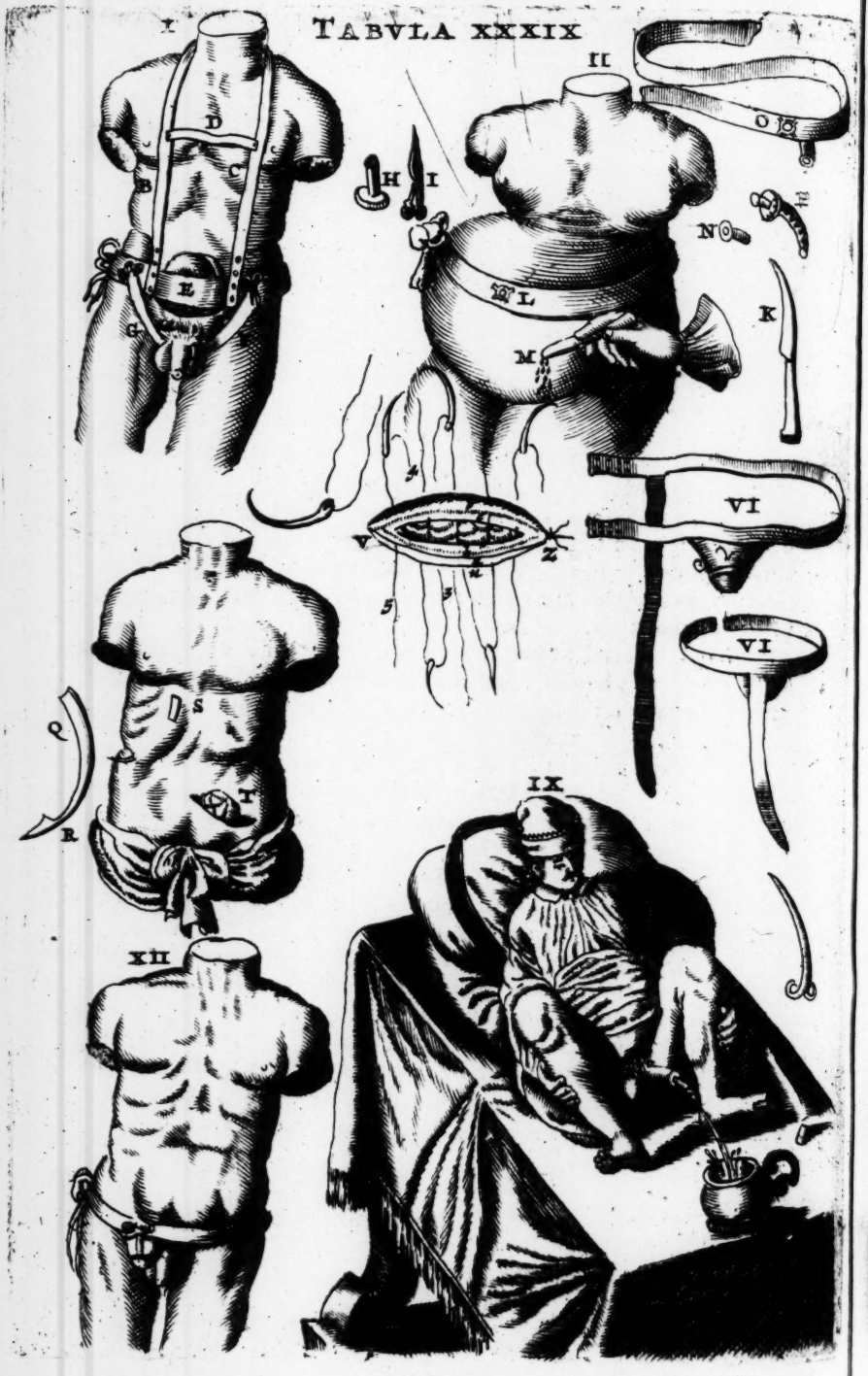
The XXXIX Table.

Of the girdle applied to the ſticking forth of the navil, and of the way to perforate the Abdomen; of cutting the external Fiſtulas of the Thorax, ſtitching the wounds of the Abdomen; of applying the Truſs, and provoking urine ſuppreſſed.

Fig. I. ſhews the girdle for the navil, of the former Table Figure VIII. applied to a man, with which alone I have cured many navils ſticking forth, where they did not come forth very much, both in men and women, children and others of full years, and I hindred theſe tumors from growing any greater.

Fig II. and III. ſhew the place, the manner, and the inſtruments for to uſe the paracenteſis, performed upon the Abdomen of hydropical people. Alſo about this manual operation there are four things to be conſidered: 1. Whether it be to be done? 2. At what time? 3. In what place? 4. After what manner? Whether it be to be done, is ſignified by the diſeaſe and the forces of the Patient, whether the diſeaſe be Aſcites only, or water be mingled with the other kindes of dropſies; namely, if the tumour of the Abdomen, eſpecially from the much drinking of water, came in a ſhort ſpace to a huge magnitude, and medicaments given at the mouth help not, becauſe the vertue of them cannot be brought into act, the natural heat being oppreſſed with the plenty of humor. The forces muſt be firm, which may be known when the ſick can ſtand upright, or ſit on a ſeat and finde no inconvenience; therefore where the diſeaſe is old, and the forces are weak, (the judications whereof are old age, child hood, coughs, ſcouring, cachoxia, a burning fever preceding, and a ſchirrus, and corruption of the bowels) manual operation hath no place there. The time is preſently; namely, before the humor ſhut up in the Abdomen, hath brought any notable hurt to the bowels and other inward parts. The place where Paracenteſis is made, is either in the navil or under the navil, three or four fingers broad of the Patient being put between, and that on the right ſide or left ſide, but never in the middle of the Abdomen by a white line; where the navil is ſo relaxed or ſwoln, that between the outward part, and the inward cavity and water, only a very thin skin paſſeth, which is perceived

TABVLA XXXIX



perceived by the touch alone, or by preſſing it with the finger, and by the clearneſs, there the Abdomen is moſt conveniently opened in the navil; but if that looſneſs of the navil appears not, then that part of the Abdomen under the navil, on the right ſide, muſt be opened where the ſpleen is faulty, and on the left ſide, if aſcites grew from the fault of the liver.

The manner comprehends the ſituation of the Patient, the inſtruments and reaſon of the operation: The Patient, who by reaſon of water hath his paunch much ſwoln and ſtretched forth, muſt be laid in his bed upon his back, or elſe muſt ſit upon a low ſeat. The inſtruments wherewith the bellies of hydropical people are moſt commodiouſly opened, are of two ſorts; namely, either the inſtrument conſiſting of a pipe with ſhoulders, H, and a needle, I, Table XII. Figure XVII. to perforate the navil with, or the pen-knife K a little blunted at the point, and having an edge only on one ſide, Table XII. Figure I. to open the Abdomen below the navil. The navil is moſt ſafely perforated, if the inſtrument with a pipe, Table XII. Figure XVII. be ſewed to a band, and that be thruſt into the middle of it L, untill it come to the ſtar marked upon it; after this the needle muſt be taken forth of the pipe, and the pipe muſt be thruſt into the Abdomen as far as the ſhoulder of it, and muſt be left there. Inciſion when it is needful below the navil varieth much: *Fallopius* makes his inciſion thus; firſt he cuts the skin overthwart the Abdomen an inch broad with a crooked knife, and that is blunt on the other ſide; this being cut, he cuts the reſt warily with a pen knife, wherewith the Germans open a vein to let blood, namely with a common lancet. *Hierom Fabrit ab Aquapend.* uſeth the ſame knife *Fallopius* doth; but he puts that into the skin a little ſlanting, untill he penetrate as far as the hollow region, and have alſo perforated the peritonæum. That the knife penetrated as far as the hollow part, not only is ſhewed by the water coming forth, but it is known by a Chyrurgian exerciſed in opening impoſtumes, when as nothing reſiſts when he preſſeth; when inciſion is made, he pulls forth his knife, and puts in a ſmall pipe of ſilver well polished, with ſhoulders, and with holes in the ſides of it, longer the firſt time (and afterwards shorter N, which may only go into the cavity) at the end ſlanting, exactly fitted to the knife, and tied to a band, that it may not ſlip out of the hole O; by this pipe he lets out the watry humor, not all at one time, but ſo much as the Patient's ſtrength will ſuffer, which is known moſt perfectly and certainly by the pulſe. The watry

humor being let forth in a due quantity, he doth not draw forth the pipe, but leaves it in the Abdomen; and he ſhuts it with a tent of lint P, that he may again let forth the water afterwards. Hydropical perſons perforated, muſt be kept moſt diligently, that the band may not be looſed, they not being ſenſible of it, and the pipe fall out, and ſo the water run all out at one time, and kill the Patient, for ſo this only remedy of ſo great a diſeaſe may be diſgraced. Following *Fabritius*, *An.* 1625. on the 7. day of *Auguſt*, I opened the Abdomen of a certain noble Virgin at Ulma, who was ſick of an Aſcites, Anaſarca, and Tympany, and ſhe lived one year and a half very ſound after this perforation; afterwards ſhe died ſick only of a perfect Tympany.

Fig. IV. repreſents the inciſion of a Fiſtula of the Thorax, which was done ſuddenly and almoſt in a moment, with a Syringotomus, which at one end hath an edge Q, Table XIV. Figure I. and the point of it was wrapt about with a ſmall button of wax R, that when it was thruſt in, it might not rend the fleſh; then it is thruſt into the Fiſtula, and when it comes to the bottom of it, it is forced through the skin and fleſh above, with the right hand; ſo that the bottom of wax remaining in the ulcer, the point of the knife may come forth by the hole made, which being laid hold on by the fingers of the left hand, the diſtance between both holes is cut aſunder at one ſtroke. It ſhews alſo a wound of the Abdomen dilated to thruſt in the inteſtines, which is the next Figure, according to the opinion of *Galen*, *L. 6. Meth. Med. cap.* 4. is ſtitched, namely the Peritonæum with the muſcles, and the muſcles again with the Peritonæum.

Fig. V. ſhews the manner how the lips of the wound of the Abdomen are brought to touch one the other; and being ſo brought, are kept ſo by ſtitching or claſps. The inteſtines being put in again, the Aſſiſtant ſhall take hold of the lips of the wound with his hands, and he ſhall draw forth ſo great a part of the wound to the Chyrurgian, as is neceſſary to be ſtitched; but he ſticks in a needle, (*i*) which draws after it a twiſted flaxen thread, from the lower and outward parts, (*u*) inwardly through the skin, (*a*) and the muſcles (*b*) that lie under it, as far as the Peritonæum, (*c*) after this the Peritonæum being not touched (*c*) of this part, he thruſts the needle through the Peritonæum of the other part, and alſo through the muſcles, from the inward parts to the outward; then taking forth the needle, he ties both ends of the thread, and makes a point; then (z) leaving a ſpace of a fingers breadth, he

thruſts

thruſts the needle through the Abdomen of the ſame part, from the upward and outward parts (x) inwardly, not touching the Peritonæum; after that he thruſts the needle through the Peritonæum, the muſcles, and the skin, from the inward parts outward, and he makes a point, and ſo he goes forward, ſometimes perforating, ſometimes skipping over the Peritonæum, untill there are made ſo many ſtitches as are neceſſary in ſewing the Abdomen. This way of ſtitching is alſo to be obſerved, when the Abdomen, after the Cæſarian birth, is to be united with claſps.

Fig. VI. is a truſs, or a ſtay for a Hernia, to be applied to the left groin of people of full growth. The girdle of the truſs (*a*) and the under band (b) perforated with many holes, that it may be ſhut and opened again, it is made of thin leather, or double cotton linnen; the truſs (y) is filled with goats hair, that it may be pretty hard, and may hinder the falling forth of the inteſtines or the caule; let it alſo have a faſtning before, leaſt the under band paſſing through may waver from it.

Fig. VII. is a truſs to be applied to children, and it is made of the ſame matter that the former is; but it differs in this, becauſe the girdle of this is not to be faſtned on the ſide, nor the under ligature before; but both muſt be faſtned behind, that children may not ſo eaſily untie it.

Fig. VIII. repreſents a truſs applied to the left groin. All things being put in again that ought to be put in, and a convenient cerat being applied upon the part affected, the target, or cushion, muſt be ſtuft with goats hair, or wool, two or three fingers length, and applied; which that it may ſtick faſt, and may not eaſily be removed from its place, it is preſſed on with a girdle before to the groin, which comes about the loins, and is faſtned on at the ſide, (*a*) and alſo with the broader under band, (b) (which being behind faſtned to the girdle, and drawn downwards, and ſo coming under the twiſt is turned up again) paſſing by the middle of the cushion, and that knitting before, which is therefore joined to the cushion, that the under band may not flag from it, and paſſing through, it is bound ſtreight to the girdle before.

The way to cure a Rupture of the Inteſtine, very often proved by me.

THis conſiſts in three things: 1. Putting back again of the inteſtine within the Abdomen. 2. By keeping of it ſo put back, that it may not again, by the groins, fall into the ſcrotum. 3. By faſtning the Peritonæum relaxed, or healing of it if it be broken. The Chyrurgian who is experienced, ſhall moſt diligently conſider, before he put in the inteſtine, whether the rupture be great or ſmall? whether it be new, or fallen to inflammation? and alſo whether the inteſtine be yet lank, or elſe filled up with ſome matter?

If the rupture be ſmall and new, and the inteſtine be lank, it will be eaſily reduced; if the Patient be laid on his back in his bed, with his head ſomewhat low, and his feet lifted up; for thus the inteſtines falling to the midriff, they draw after them that which deſcended to the Scrotum.

But if the rupture be great and new, the Chyrurgian muſt, with his fingers, handle the inteſtine that is ſtretched forth with no matter; and he muſt, by degrees, ſoftly turn it about, the Patients head being firſt laid ſomewhat low, ſo long till by little and little it go in again within the Abdomen. And if the Chyrurgian be weary with his hand, he ought to have an able Aſſiſtant, well informed in this operation, who may help him, and may likewiſe handle the inteſtine.

When inflammation is joined with a rupture, which is known by pain, heat, and a Feaver, or winds, the ſign whereof are rumbling; and pain extending without any weight; or excrements which are known by not going to ſtool in two or three daies, by great hardneſs of the ſcrotum, and moſt grievous pain; then we muſt deſiſt from reducing the inteſtine, untill ſuch time as the inflammation is over, the excrements are gone forth and the winds diſperſed. This following Cataplaſm is proper againſt the inflammation:

Take Barley meal, one pound.
Wheat bran, half a pound.
Compleat oil of Roſes, three ounces.
Red Wine what is ſufficient, mingle them.

This

This being laied hot on the ſcrotum and groin will very much digeſt, moderately repells the humours, and moſt effectually ſtrengthens the parts. If the inflammation be not gone after 24. hours, the Cataplaſm muſt be ſo often renewed and applied, as ſhall ſeem needfull to cure the inflammation. When the Cataplaſm is over dried by the vehement heat, and ſo is hard to come off, we muſt pour on Wine and Oil hot. Alſo the place inflamed, with the like good ſucceſs, is fomented with a hot lixivium, as *Fallopius* appoints, made with Beech ashes boiled in it: Take therefore two bundles of raw thread (*which hath not yet loſt the digeſting quality of it by Fullers waſhing*) put them into the kettle, and boil them with half a handfull of Cummin-ſeeds in a ſharp lixivium; then take one of the bundles out, and crush it out between two dishes, and lay it broad very hot about the ſcrotum, as hot as the Patient can ſuffer it; when it grows luke warm take it away, and lay on the other; and do this, changing them ſo often, untill the inflammation be quite gone.

When great pain accompanies the inflammation, then adde to the Cataplaſm or fomentation, ſome, or a great part of oil of Roſes.

If with inflammation there be excrements join'd, which hinder the inteſtine from being put back to its place; this is truly a moſt deſperate caſe; yet (*omitting Purgatives given by the mouth, which elſe would cauſe a greater flux of humours to the part affected, and haſten the Patients death, as* Fallopius *teſtifieth*) we muſt try to bring forth the excrements with baths or fomentations that looſen diſtention, and by linitive Clyſters caſt in in a moderate quantity. In the mean time we muſt prevent generation of excrements, giving to the ſick meats of good juice, and few excrements, ſuch as are thin fleſh broth, rere egs and ſuch like.

Alſo very often winds, without inflammation, fill the inteſtine; in which caſe there is nothing better than a fomentation that is made of a decoction of a ſharp lixivium, with Cummin-ſeeds and raw thread, and by adding a ſmall quantity of ſtrong Mallage wine to it. The inflammation being cured, and the excrements voided forth, and the winds diſperſed, let the inteſtine be thruſt back into its proper place, gently, by little and little, thruſting it in with the fingers. After the inteſtine is thruſt in, by reaſon of the relaxation of the Peritonæum, ſlipt into the Scrotum, lay on a binding plaiſter commended by *Hier[illegible]. ab Aquapend.* which is this:

Take Bole Armeniac,
Dragons blood,
Maſtick,
Sarcocolla, of each 1 dram.
Horſe-tongue,
Powder of Tyles, of each 3 drams.
Roſin of the Pine-tree, 1 ounce and a half.
The white of an Egg,
Wax, of each alike what may be ſufficient to make a plaiſter.

Spread this upon a thin ſoft piece of leather, as great as the part affected, that it may not be much too big, and lay it on; firſt shaving away the hairs from the groin; and never renew it unleſs it will no longer ſtick to the skin. The plaiſter being laied on, lay over it the Truſs, Figure VI. that it may bind cloſe to the groin, Figure IX. that it may preſs upon the hole of the Peritonæum, through which the inteſtines fall down.

If by reaſon of the breaking of the Peritonæum, the inteſtines fall down into the Scrotum, we muſt mingle glutinatives with aſtringents:

Take the binding Cerate of *Hierom. Fabritius ab Aquapendente*,
Emplaſtrum Apoſtolicon Nicolai, of each equal parts.
Mingle them and temper them with Oil of Maſtick.

Spread this on leather, and with a Truſs lay it to the groin, to keep the inteſtine in its place, and to heal the breach through which the inteſtine finds a way to the Scrotum. For the principal cure conſiſts in outward remedies, and an exquiſite Truſs to bind it.

When theſe things do not help, there is need to purge the whole Body, eſpecially from watry and phlegmatick humours, which hinder the conſolidation or binding together of the Peritonæum broken or dilated, which of itſelf is hard to cure: Adde to this, that ſince it is neceſſary not only to uſe binding remedies outwardly, but alſo inwardly, if omitting the preſcribing of univerſals, the body should abound with excrementitious humours, the Patient, by the obſtruction of the Bowels ariſing from thence, might fall into Feavers or other diſeaſes, then we muſt purge with gentle remedies. Premiſing univerſals we muſt flie to binding remedies both internal and external:

I hold this following Electuary to be one of the principal things to be taken:

Take conſerve of Comfry, 2 ounces,
Of old Roſes, 1 ounce.
Citron pills candied,
Orange pills candied, of each half an ounce.
Powder of the herb Thorow wax.
Rupture wort,
Adders tongue,
Great Comfry root, of each 1 dram and a half.
Plantain ſeed, 4 ſcruples.
Cichory,
Fennel, of each 1 dram.
Red Coral prepared, 1 dram and a half.
Pearls prepared, half a dram.
The ſtone Chryſocolla prepared, 1 ſcruple.
Syrup of Myrtils or Coral, what may be ſufficient.
Mingle them and make an Electuary.

Whereof the Patient, four hours before dinner, and three before ſupper, ſhall ſwallow down the quantity of a Walnut, and drink after it a glaſs of ſharp red wine, or white, wherein this bag hath been infuſed:

Take Strawberry leaves,
Middle Comfry,
Perwinkle,
Horſe tail,
Adders tongue,
Thorow wax, of each 1 handfull.
Roots of Solomons ſeal, 1 ounce and a half.
Great Comfry, 1 ounce.
Plantain ſeed, half an ounce.
Cichory, 3 drams.
Fennel ſeed, 2 drams.
Cummin ſeed, 1 dram.

Cut and bruiſe them and mingle them for a bag, which muſt be infuſed in three meaſures of white wine. If by reaſon of a Feaver wine is not allowed alone, the wine muſt be mingled with water, and altered with the leaves of Alchimilla. Alſo for Children this following powder is excellent.

Take great Comfry,
Hearbs, Adders tongue,
Thorow wax,
Rupture wort, of each one dram.
Plantain ſeed four ſcruples,
Fennel,
Cichory, of each one dram.
Red Coral prepared, two ſcruples.
Pearls prepared, one ſcruple.
Stone Chryſocolla prepared, half a ſcruple.
Sugar of Roſes in tables, what may ſuffice to give it a pleaſant taſte, mingle them and make a powder, whereof morning and evening give a ſmall ſpoonfull in broth.

The Infant having taken the powder, ſhall drink of this mixture, or of this following decoction.

Take Plantain water,
Strawberry water, of each ſix ounces, mingle them.

And if you pleaſe you may ſweeten it with Sugar, or

Take great Comfry,
Hearb Perwinkle,
Bugle,
Plantain ſeed, of each two drams.

Cut them, and mingle them in a paper for a decoction.

Amongſt the uſe of inward remedies, a convenient plaiſter alſo under a fit truſs, muſt be applied to the groin; and as oft as there is need to renew it, the place affected (whileſt the Patient lieth on his back in his bed) muſt be fomented with the following decoction.

Take roots of great Comfry,
Tormentil, of each one ounce and a half.
Hearb Perwinkle,
Strawberries,
Adder's tongue,
Horſe tongue,
Rupture wort,
Thorow wax, of each one handful.
Red Roſe leaves,
Wilde Pomegranate flowers, of each half a handful.
Pomegranate pills,
Acorn cups,

Seeds

Seeds of Sumach, of each two drams.
Cut them and boil them in Red wine.

After this lay on a new plaiſter, and let it ſtay on until it will no longer ſtick to the skin; and this changing of the plaiſter, and formenting of the part affected, muſt be ſo often renewed, until the dilatation, or ruprure of the Peritonæum be bound up, and glewed faſt together again.

But all theſe remedies, both outward and inward, will do no good, if there be not a right diet obſerved; wherefore the ſick muſt avoid all ſweet meats, windy, and of ill juice, of which number are all raw herbs, pulſe, ſummer fruits, milk meats, and ſuch like; he muſt uſe to eat bread well baked, with Aniſeed or Cumminſeed in it; he muſt alſo feed on dry meats to bind, and clammy to heal; for the firſt purpoſe, Thrushes, Blackbirds, and Partridges are good; and for the ſecond, Calves flesh, Gees, and Ducks feet and wings, rather boiled then roſted. His ordinary drink muſt be Wine, not ſweet nor white, but red and aſtringent, or at leaſt of a taſte between both. *But meat and drink taken in ſmall quantity, doth much conduce to the timely recovery of his health.* The ſick lying on his back, with both his head and feet raiſed, muſt keep his bed at leaſt forty daies, and muſt take great care of his truſs, and muſt never riſe without it, be the time never ſo short; much leſs muſt he go to ſtool, leſt the inteſtines falling down, ſhould open again that which is newly bound and healed. Alſo care muſt be had, that the belly be daily looſe, leaſt when the excrements are hard, and are voided by ſtraining, that ſtraining ſhould do very much miſchief. To looſen the belly that is too much bound, Prunes of *Ausburg* are very good, if four or five of them be eaten an hour before meals. And it will do no hurt, if once a week the ſuperfluities of the firſt region be purged forth with Pills of Aloes, preſcribed by *Hierom Fabric. ab Aquap.* the weight of a ſcruple taken one hour before ſupper, or by a Clyſter caſt in in the evening, which if it be made of a decoction looſning and cooling, Hony of Roſes, Lenitivum, and Oyl of Chamomil, it will keep the belly looſe for many daies after; when forty days are paſt, the ſick may riſe; but let him continue his plaiſter and truſs, untill they may be ſafely taken off. Though none of thoſe that geld men, think that ſuch as have ruptures can ever be cured, without that moſt dangerous cutting forth of the Teſticle, (Table XL. Figure IX, &c.) but that there will be a fear left that it may come again; yet I have cured multitudes, whoſe

whoſe Sirnames I willingly conceal, in a long time, and with great care by the ſaid remedies; and reſtored them to their former health by uſing a good Diet, and a good Truſs: But ſuch as I could not cure perfectly, by reaſon of the greatneſs of the diſeaſe, or the long continuance of it; yet I preſerved them ſo, that the diſeaſe did not increaſe upon them.

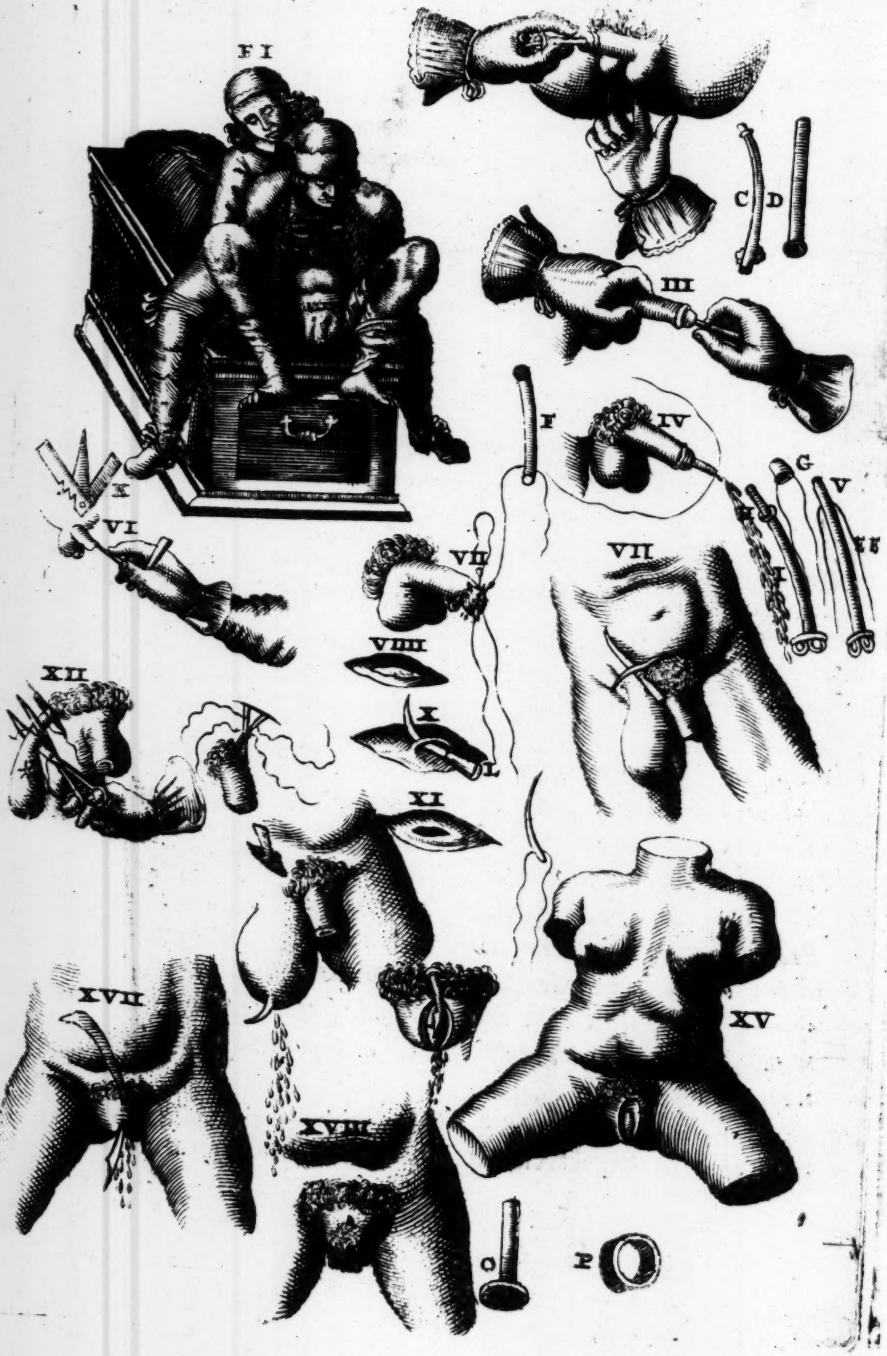
Fig. IX. ſhews how the urine ſuppreſſed is drawn forth by a Catheter; which manual operation is eaſie to a Phyſitian that is skilfull; and on the other ſide hard and dangerous enough to one that is ignorant. *Celſus* deſcribes this *L.* 7. *C.* 26. but ſometimes we are conſtrained to attempt to bring forth the urine by manual operation, when the ſick cannot make water, or elſe by age the paſſage of it is fallen down, or becauſe the ſtone, or ſome clotted blood are in the way. Alſo oftentimes a ſmall inflammation, or a Caruncle bred in the urinary paſſage, will not ſuffer it to be made naturally. And this is not only neceſſary for men, but ſometimes alſo for women; wherefore brazen, or rather ſilver, pipes are made, which they call Catheters; which that they may ſerve for all great and ſmall bodies, the Phyſitian muſt have three ready for men, and two for women. For men the greateſt is fifteen inches, the middle ſize is twelve, and the leaſt nine inches. Of thoſe for women the greateſt is nine inches, and the leaſt ſix. They muſt be crooked; namely, thoſe for women a little, but for men much more, and they muſt be all very ſmooth, and neither too thick nor too thin. Then the Patient muſt be placed on his back upon a low ſeat or a bed; and the Phyſitian, on the right ſide, with his left hand muſt hold the man's yard; and with his right hand he muſt gently thruſt into the urinary paſſage a ſilver pipe E anointed with oil; and when it comes to the neck of the bladder, he muſt incline the Catheter with the yard, and ſo thruſt it into the bladder; and when the water is made by it, take it forth again. *Thus far Celſus.* In this manual operation great care muſt be had, leſt in thruſting in of a ſilver pipe, the fleſhy folding be not hurt which ſhuts the orifices of the ſeminal veſſels, that end about the urinary paſſage; which is known by the difficulty of thruſting it in, the pain, and blood coming forth. For when theſe ſigns appear the Catheter muſt be drawn back a little, and thruſt in again gently, untill, not touching the folding, it go into the bladder, and the urine come forth by it. Others bind to the

the ſilver wier, that fits the hollow of the pipe, a lock of cotton, and they thruſt it into the cavity of the Catheter, and they force that, with the pipe, into the bladder; when the Catheter comes into the bladder, they draw the wier out of the Catheter, with the wool at the end of it; and ſo they draw forth the urine, as by a ſyringe. But neither the cotton nor wier is neceſſary. Nor the cotton becauſe the urine comes freely forth by the Catheter that hath holes on the ſides: Nor the wier becauſe, for the reaſon now mentioned, it hinders more than it profits: For whileſt they draw the wier out of the pipe, oftentimes they pull forth the pipe alſo, with more difficulty to be thruſt in again, when the urine is ſuppreſſed by reaſon of inflammation of the bladder, it is not without danger to thruſt in the Catheter; for the neck being torn, the inflammation is augmented; and when that ceaſeth, there follows almoſt an incurable voiding of water, which the ſick cannot hold. Wherefore it is better with a ſmall wax candle, Table XIII. Figure IX ſomewhat bended, and anointed with common oil, to attempt manual operation at firſt, than to exaſperate the diſeaſe by the uſe of the Catheter. Alſo where there is difficulty of making water, which comes by reaſon of the kidneys in fault, the Catheter and wax candle are uſed in vain, becauſe the urine is not contained in the bladder.

The XL Table.

Of the placing of the ſick to try and take forth a ſtone out of the bladder and urinary paſſage; the abating of the heat of urine by manual operation; the extirpation of a Caruncle bred preternaturally in the paſſage of the urine; of the perforation of the yard; of binding venerious Warts upon the Præputium; of the cure of Hernias with the loſs of the Teſticle; of inciſion made upon the Hymen that is whole, of opening the Matrix that is ſhut, and of the keeping the Womb ſlipt out beyond the Abdomen, and put in again, in its natural place.

Fig. I. ſhews the placing of the ſick troubled with the ſtone; for in this caſe they ſearch for the ſtone of the bladder, thruſting


FI
C
D
III
I
IV
G
V
X
VI
VII
VII
VIII
XII
X
L
XI
XVII
XV
XVIII
O
P

ing the Catheter A through the conduit of the yard, and putting the forefinger into the fundament.

Fig. II. ſhews, beſides the way of ſearching for the ſtone, the inciſion of the Perinæum B, upon the Director C, thruſt into the bladder, performed by the pen-knife (Table II. Figure II.) Inciſion being made the Stone-cutter draws out the Directors, and he thruſts in the Catheter by the wound made in the Perinæum, that the Dilator, or Speculum Veſicæ above the pipe, may come into the bladder without any hurt. The Dilator being applied he draws forth the Catheter, he dilates the neck of the bladder, and laying hold of the ſtone with a fit inſtrument he pulls it out, &c. Read *Ambroſ. Paræus lib.* 17. from chap. 35 to 48. concerning the drawing out of a ſtone: and that exquiſite Treaty of *Guill. Fabrit. Hildan.* of cutting for the ſtone in the bladder.

Fig. III. a ſtone is taken forth of the urinary paſſage without cutting; becauſe if the ſtone came out of a more narrow place; namely out of the neck and orifice of the bladder, it will much more eaſily be taken out of a larger place, as is the conduit of the yard. I take the Probe of *Aquapendens*, which at the end is made hollow like a ſpoon D, as an ear picker, this I thruſt into the paſſage, ſo that it may paſs beyond the ſmall ſtone E, and may in a manner comprehend it in its hollow place; then through the pin of the Probe that is hollow, I pour in oil of ſweet Almonds into the urinary paſſage, and I draw the Probe gently to me, for ſo the ſtone is by degrees drawn forth; both preſſing of it with the fingers, and drawing it with the Probe; ſee Table XIV. Figure VIII. Alſo I have often obſerved ſuch ſtones that are fallen into the urinary paſſage, to come forth of themſelves, without cutting or help of the ſpoon; if the Patient ſit frequently in an emollient bath, and take medicaments that are moderate to break the ſtone, or will ſuffer them to be dropped into the conduit of the urine.

Fig. IV. doth aſſwage the heat of urine, which in a virulent Gonorrhæa is ſo vehement when a man makes water, that the Patients had rather die than make water. When therefore ſuch heat and pain is felt in making water, that it cannot be aſſwaged by any medicaments taken at the mouth, or poured in, the Patient ſhall put a ſilver moſt ſmooth pipe into the paſſage of the yard, tied by threads (F) which he muſt hold in his hand,

leſt

leaſt the pipe by force of the urine coming forth, ſhould be driven out again from the urinary paſſage; but that it may ſtay faſt in, until the urine run forth through it without pain, not ſo much as touching the conduit of the yard.

Fig. V. Oftentimes a caruncle is bred in the urinary paſſage from an ulcer, and it ſometimes grows ſo great, that it ſtops the water. This is taken away and cured by manual operation, and fit medicaments that have a corroding power; but that no other parts but only the caruncle in the paſſage may be eaten away, or the water ſhould wash away the medicaments that are applied, *Hierom. Fabrit. ab Aquapend.* invented an inſtrument, by means whereof nothing but the caruncle is eaten off, and alſo it hinders that the medicament applied to the caruncle, is not washed away by the water that is frequently made. For a pipe (G) is made of linnen, ſmeared over with white wax, (in length a fingers breadth, and ſo broad that it may be equal to the ſilver Catheter I) which hath a long thread hanging at it. This pipe, firſt ſmeared without with a convenient medicament, as for example;

Take Hony calcined to ashes,
Tutty prepared,
Fresh Butter washt in Planten water,
Turpentine ſo washt alſo,
Yellow wax, of each half an ounce,
Burnt Allum, half a dram.

Mingle them and make a Liniment; which, as I have found by common experience, will conſume the caruncles of the urinary paſſage without pain, or excoriation of the parts that are ſound. Some highly commend the experiment of *Rochus Cervierus*;

Take powder of quick Sulphur,
Mercury precipitate,
Verdigreas,
Crud Antimony, of each three drams,
White Wax, one ounce.

Mingle them according to art in a leaden Mortar, to the form of an unguent. The pipe being anointed with one of theſe medicaments, it muſt be fitted to the wier H, that comes forth beyond the ſilver pipe; and together with the ſilver pipe and wier, it muſt be thruſt into the urinary paſſage, until it meet with the caruncle; and when it is come to the place of the caruncle, the ſilver pipe with its wier muſt be drawn back; but the pipe made of linnen, ſmeared over with wax and put in, muſt be left in the paſſage,

paſſage, that the urine may come forth by it; and this alſo hinders, that the medicament applied to the caruncle cannot be washed away by the urine.

Fig. VI. Sometimes it happens that infants are born without any hole in the top of their yard to make water by; this muſt be preſently cured with a sharp knife that hath a narrow point. The ſick muſt be laid on his back, and the yard muſt be taken hold on near to the glans with the left hand, and with the knife held in the right hand, the hole that is shut muſt be opened; when this is done, a tent of lead muſt be thruſt into the hole, that is ſmall and ſolid, and anointed with ſome healing medicament; which muſt be taken forth when the ſick makes water, and then thruſt in again, and this for three or four daies, until the lips of the hole be skinned. But if children be born with a very narrow hole in the glans, that muſt be preſently enlarged by thruſting in a ſmall tent, (made of the pith of Elder, and anointed with unguent of Roſes) that it may ſwell by the moiſture it drinks in, and being ſwoln may enlarge the hole.

Fig. VII. shews pocky excreſcences of flesh in the glans and præputium, and the way to cure them, which is done moſt commodiouſly by binding; for ſince that theſe caruncles have a narrow baſis, they are tied with a ſingle ſmall red coloured ſilk thread, and they will fall off in two daies; ſometimes they are touched moſt profitably with Oil of Antimony or Logadorum; ſometimes they are as well laid hold on with the pullers, and are cut off with a pen-knife; after that the place is cauterized with a very red hot iron, that the blood may not taint the parts near unto it.

Fig. VIII, IX, X, XI, XII, XIII, XIV. repreſent a moſt horrible Chyrurgery, wherewith at *Nurſium*, in my time, the moſt famous Gelders of Italy did cure Hernias of the Inteſtines. The ſick lies on his back, and is bound upon a table; then the whole dilatation in the groin is marked oblikely with ink; the Aſſiſtant, at the bottom of the Abdomen, preſſes together the Inteſtines, that they may not come forth; then the Chyrurgian, with a crooked knife, making an oblike inciſion of the skin, Figure VIII. (that the progreſs of the Peritonæum may be ſeen, Figure IX.) he cuts the Peritonæum with the ſame knife, Figure X. and by the hole Figure XI. he forces the Teſticle out upwards; after this with his fore finger he pulls away all the membranes, and ſeparates them from the Scrotum; and firſt of all he draws forth the sheath membrane dilated, Figure XII. * and the teſticle with it; then

then he laies hold of the ſpermatick veſſels, and the sheath coat, with a convenient pair of pincers, and he faſtens them together; then he cuts forth the teſticle above the ſuture with a knife, and caſts that away; (others tie the ſpermatick veſſels and the coat in two places, and laying hold of the ends of the lower thread, they cut forth the diſtance with a pair of cizers, and caſt away the teſticle) but he cauterizes with a red hot iron all the veſſels that bleed, and puts them in, leaving a long thread hanging without; and laſtly he puts in an iron inſtrument (L, Figure XIV.) by the hole of the groin, which hath a ball of wax at the point of it, as far as the bottom of the Scrotum, that he may make a hole through it to purge forth the matter, which daily falls into the Scrotum from the wound in the groin; and he keeps the hole open by a tent put into it, untill ſuch time as the wound in the groin be cured.

Fig. XV. repreſents a membrane going overthwart the womans privities within, which the Antients took for hymen.

Fig. XVI. The membrane called hymen, which hinders copulation, but it is perforated above, to let forth the menſtruall blood, with a crooked knife (Table XII. Figure II. to whoſe point a little button of wax is faſtned) it is cut aſunder, that the woman may be made moſt fit for man. And if that little skin do alwaies cover the sheath of the matrix, *Paulus lib. 6. cap.* 27. cuts it with *Celſus* his Spatha, Table II. Figure I.

Fig. XVII. Teaches how *Hierom. Fabrit. ab Aquapend.* where the lips of the womb cleave together, uſes manual operation according to *Paulus*: He laies the woman on her back, (in this manual operation, and that of the precedent Figure) ſo that her legs are drawn up as high as her belly, and her thighs before ſtradling wide; he alſo puts her arms under her hams, and binds them to her neck with fit ligature; then with a knife made to cut fiſtulas, either with a Syringotomus sharp at one end, (Table XIV. Figure I) or with a Woodcocks bill, Table XII. Figure I, II, III, and V. he cuts the lips that grow together, being firſt marked with ink all the length of them. The lips being parted, and the flux of blood ſtopt, a leaden pipe is anointed with ſome healing medicament, and thruſt into the matrix, till the cure be perfected, that the lips may not grow together again.

Fig. XVIII. treats of the matrix falling forth without the Abdomen, which thing happens to women, when the membranous ligaments of the womb are either ſtretched or broken. The cure

of

of this diſeaſe requires three things; the placing again of the womb, fallen forth, in its proper place; then to keep it there in its place; and laſtly, to knit or conſolidate the ligaments.

Before we repoſe the womb in its place again, we muſt conſider whether the falling forth of the Matrix be ſingle, or whether there be not inflammation or a cold humour join'd with it; for when theſe appear we muſt not attempt to put it back to its place, untill ſuch time as the diſeaſes be gone. A Cataplaſm or lump of raw flax boiled in a ſharp *lixivium*, and wrung forth, will ſtop the inflammation; concerning which ſee the cure of a rupture of the inteſtines, Table XXXIX. Figure VIII. A fomentation of the decoction of Mallows, Marſh-mallows, Camomil flowers, *&c.* will diſſolve a cold tumour. The ſaid tumours being cured, and the belly excrements voided by Clyſter, and water being made (that the Matrix may be free from all compreſſion) the Chyrurgian, or ſome experienced Midwife, muſt lay the woman on her back, ſo that her hips may lie higher, and her hams may be bended inward, and her legs may lie ſtradling; then he muſt take the Candle O (which muſt have a baſis) made of Wax and Aſſa fætida, and is as thick as the ſheath of the Matrix; and with this, not uſing any violence, he muſt thruſt inward all that which fell down, untill the whole lump be reduced into its place.

This being done the Patient ſhall faſten the candle with a three double cloath dipped in red wine, and preſſed forth again, and with the band, Table XLI. Figure III. for eight or nine daies let her lie with her legs ſtretched forth and joined cloſe together, ſo that one may lie upon the other; let her bind an Eagle ſtone to her arm, and let her put ſweet ſmelling things to her noſtrils, unleſs ſhe be ſubject to ſuffocation of the womb. The Matrix being put back into its place, which fell down by relaxation of the ligaments, the body muſt be purged from watry and phlegmatick humours; and (after the applying of cupping glaſſes, without ſcarification, with a great flame, under the navil and kidneys, and amongſt the uſe of inward aſtringent medicaments) upon the region of the Matrix, and near the groins an aſtringent plaiſter muſt be laid; and the ring of Box P muſt be thruſt into the ſheath, and there left untill the cure be perfect. The woman muſt every third or fourth day remove the plaiſter, and ſhall thruſt the pipe or Metrenchytes, Table XLII. Figure III. into the ſheath of the womb; then, for an hours ſpace, let her

TABVLA XXXXI

fit in a bath made of moderate aſtringents (for if they be too ſtrong they ſtop the Tearms) and let her lay on a new plaiſter. She muſt obſerve a due regiment of things not natural, which was preſcribed to thoſe that have Hernias in the quoted place. To women not yet well purged, after child birth, the uſe of aſtringents is moſt dangerous. When the membranous ligaments of the Matrix are broken, we muſt mingle, with an aſtringent cerat, Emplaſtrum Nicolai or ſome other healing plaiſter.

The XLI Table.

Of the ſhortning of the Clitoris or womans yard unprofitably augmented; of Metrenchyta, Speculum ani, and Matricis; of drawing forth the dead child, and putting back again of the fundament fallen down.

FIG. I. teacheth how *Hierom. Fabritius ab Aquapendente*, with an inſtrument made for a Polypus, cuts off the unprofitable increaſing of a Clitoris, which is a common diſeaſe amongſt the Ægyptians and Arabians. A ſhews the Clitoris laied hold of with the pincers: B ſhews the body of the Clitoris cut off, and placed beyond the pincers.

Fig. II. repreſents a ſyringe for the Matrix, that is faſtned to the ſyringe, Table XIII. Figure I. that it may be put into the hollow Matrix, to inject by it ſuch liquors as are convenient.

Fig. III. ſhews the Truſs which keeps on the medicaments laid upon the outward orifice of the Matrix.

Fig. IV. teacheth how to uſe the Speculum Matricis, pictured Table XVI. Figure IV. which *Paulus lib. 6. cap. 73.* deſcribes in theſe words following: Let the woman be placed on her back in a chair, drawing up her knees to the top of her belly, but her thighs ſtradling; let her arms come below her hams, and with fit bands let them be bound to her neck. But the Chyrurgian, ſitting on the right ſide, ſhall ſearch with a proving inſtrument, called a perſpective, fit for the age of the Patient; and by his Probe he ſhal meaſure the depth of the Womans Matrix, leſt if the pipe of the Dioptra be too long, the Matrix

might be preſſed by it. And if the pipe of the perſpective be longer then the hollow of the matrix, linnen clothes folded muſt be put into the brims of the privy parts, that the Dioptra may be placed upon them; you muſt warm the pipe, anointing it with convenient oil. and ſo gently thruſt it in, having a ſcrew at the upper end of it; the Dioptra muſt be held by the Chyrurgian, and the ſcrew muſt be turned about ſoftly without violence by the Aſſiſtant, that thereby the plates of the pipe being drawn aſunder, the hollow matrix may be laid open, to find out that which requires manual operation.

Fig. V. The dead child is drawn forth with crooks, (namely, when the child, by reaſon of its preternatural ſituation, cannot be driven forth with Horſe ſtones prepared, which *Horatius Augenius* commends to us, or by drinking the milk of another woman) Table XVII. Figure IV. pictured out of *Andreas à Cruce*, and put into both cavities of the eyes; if it cannot be taken forth whole, it muſt be cut with the knife, (Table II. Figure II.) and obſerving what muſt be obſerved, it muſt be taken forth by pieces. See more in *Hieron. Fabrit. ab Aquapend.*

Fig. VI. The ars gut of children newly born being ſhut, is perforated with a lancer: After the operation, you muſt apply ſuch things as were preſcribed in the perforation of the yard and the matrix.

Fig. VII. Shews the repoſing again of the right gut fallen down; it muſt be done gently, and attempted with the fingers of the Chyrurgian, (but others commend the Patients fingers) with a four double linnen cloth D, and with a band to hold on the medicaments, and to keep the inteſtine in its proper place.

Fig. VIII. The right gut is looked into with a dioptra, Table XVII. Figure II. made ſomething hot, and anointed with oyl, that it may be made ſlippery, to ſearch out the quality of the Emrhods. Alſo we know exactly the condition of ulcers, by putting a tent into the fundament, and leaving it there an whole day, and then pulling it forth again. The ulcers of the right gut being ſeen, are moſt ſafely cured with a pipe (having a long handle, and perforated on the ſide, Table XIV. Figure I.) covered with a linnen cloth wet in ſharp wine, and preſſed forth again, with a hole in it; (for a ſolid pipe, Table XVI. Figure I. is only ſmeared with the white of an egg) and thruſt into the fundament, it muſt three or four times receive the iron wier pin made very red hot, Table XVI. Figure IV. and Table XXXVII. Figure I. as we ſaid before for the manual operation of ozæna. The operation being ended,

ended, the place affected muſt be dreſſed with medicaments poured in, and laid to it, untill it be perfectly cured.

The XLII Table.

Of Inciſion for Fiſtulaes; cure of the Emrods; application of Enteren hyta; and of two Monſters.

THe fiſtulaes of the fundament are of two ſorts; ſome riſe from an ulcer of the right inteſtine, which hath divers cauſes, as ſalt flegm, ſharp choler, and the French Pox, (eſpecially in hotter Countries) which by corroding produce fiſtulaes in the fundament; others riſe from ſome knot (by riding or by ſome fall) breeding outwardly about the fundament, and coming to ſuppuration; and if the quitter of it cannot find a way out, it will make a deep hole.

The Antients either eat away the right inteſtine, and withal they perforate the four common covers, that ſo the corrupted matter, or rather bloody atter may come forth outwardly by the ſkin, or elſe they reſt about the muſculous parts, and ſuch as are next the skin. Alſo the latter Chyrurgians perforate the inteſtine, or elſe they proceed only to the outward coat of the right inteſtine.

Aquapend. L. 3. Pentateuch cap. 12. doth exactly handle the ſigns of the fiſtulaes ſpoken of. I have ſeen all theſe fiſtulaes cut with iron inſtruments neatly, and happily cured, by the moſt excellent Phyſitian and Chyrurgian, *Adrian Spigelius*, my moſt honoured Maſter (whoſe Anatomical Preparator I was, and whoſe Aſſiſtant I was, in performing manual operations, for ten years) for ſeven years, namely from the year 1616, to the year of our Lord 1623. I practiſed in the moſt eminent and famous Univerſity of *Padua*, which is held to be almoſt the principal of all Univerſities, not only in *Italy*, but alſo in *Europe* and elſewhere, by reaſon of the ſplendor of moſt famous Doctors, the authority of the moſt antient Studies, and the rare Monuments of all Learning and all Vertues. Nor are there wanting to me men of great name, who with great courage following the wars, were troubled with fiſtulaes in the fundament coming from the French Pox, theſe I cured in my own Country, relying upon the frequent experience of my Maſter, by the way following.

TABVLA XLII

The cure of Fiſtulaes in the Fundament that penetrate.

WHen I undertake to cure a fiſtula, proceeding either from an ulcer of the right inteſtine, or from ſome knot growing on the burrocks, and penetrating, and not yeelding to any medicaments, I draw forth a ſilver probe, (Figure I. letter *b*) having at both ends two round knots, (*c*, *d*) and I bend it as need requires: To the end hereof (*d*) and to the round button of the Syringotomus (*e*) (Table XIV. Figure III.) I tie a double flaxen thread (*f*.) Theſe things being rightly performed, I gently thruſt in the probe into the orifice of the pipe (*g*) and I draw that, and the double thread, and the round end of the knife, through the orifice of the fundament (*a*) as it is apparently deciphered Figure II. letters *h* and *i*. After this I take in my left hand that part of the inſtrument called Syringotomus that cuts, and is marked with (*h*) but in my right hand I take the part of it (*i*) and ſo drawing and driving up and down the inſtrument, at one ſtroak, that the ſick may not be long tormented with pain, I cut it quite through. This being cut, the blood muſt be ſtopt, inflammation hindred, and the callous muſt be conſumed with this medicament, (take Arſenick prepared, half a dram, Hony of Roſes, half an ounce, mingle them) the new wound muſt be filled with flesh and skinned. By this means, without any actual cautery, (which others praiſe exceedingly to conſume hard callous ſubſtance in fiſtulaes) fiſtulaes that penetrate are moſt eaſily and moſt ſafely cured.

The cure of Fiſtulaes of the Fundament that do not penetrate.

IF there happen to be a fiſtula in the fundament, which had its original from an ulcer of the right inteſtine, and yet hath not perforated the common covers: I take in my hand the probe (*k*) which at one end hath a round head, and a hole to put a ſilken thread through (*l*) at the other end, for to make inciſion at the bottom of the fiſtula, it is sharp, like to a needle with three points, to the top end whereof you muſt faſten a little wax pellet (*m*) whereby the top of the inſtrument findes more free acceſs into the bottom of the fiſtula, and there is no fear that it may hit againſt the ſides of it, to hinder the operation and cauſe pain; wherefore having prepared my probe, with the wax put on it, I ſearch

for the bottom of the ulcer of the inteſtine, and when I have found it, by thruſting the probe hard I perforate the skin, (Fig. III.) and I draw it all through the fiſtula, the ſilken thread hanging down at both holes (*o*) Figure V. when the hollow place is perforated, *Cornel. Celſus lib. 7. cap. 4. de ani fiſtulis*, and others that follow him, bind both ends of the twiſted thread, (yet one of ſilk, that were ſingle and of a red colour, by reaſon of its ſmalneſs and tincture, would ſooner cut it and eat it away) and they twiſt it with an overthwart ſmall ſtick (*n* Figure V.) very ſtreight, and ſo they cut all the fiſtula with a thread; yet becauſe the inciſion and cure of the whole fiſtula by a thread (Figure V.) proceeds too ſlowly, and there is continual pain with it, (becauſe every operation ought to be done quickly and ſweetly) *Hierom Fabrit. ab Aquapend* deſervedly rejects it, and ſaith there is no place for this way, but only for fearful people who are afraid of the iron inſtrument, wherefore I do ſo demean my ſelf. The fiſtula being perforated with a probe, and with holes (by the help of a ſilken thread ſtreight twiſted with a ſtick for two daies) for the uſe of the Syringotomus, (Table XIV. Figure II.) which at one end hath a thicker head ſufficiently dilated; I remove the ſtick (*n*) and the ſilk, (Figure V.) and cut the fiſtula after that faſhion as I have deſcribed it before Fig. I, and II. This latter way of curing fiſtulaes by a thread and edge of the knife, joins into one the opinions of *Celſus* and the latter Chyrurgians; and by experience, which is a moſt faithful witneſs, it is better then ſimple inciſion performed by a thread, and more tolerable, but eſpecially when the orifices are too far aſunder, by reaſon of the length of the fiſtula. If this operation alſo ſeem to be too ſlow, the Chyrurgian ſhall ſatisfie all conditions of good operation, if he preſently cut the fiſtula with that knife called Syringotomus, which cuts at that end where it hath a little button beſides. I ſet forth this inſtrument before, Table XIV. Figure I. and I applied it, Table XXIX. Figure III. If ſuch fiſtulaes grow from outward knots, and ſuch as impoſtumate, they require the ſame cure, proceeding as I ſaid Figure IV. *Note*, the ſphincter muſcle, according to *Hippocrates de Hæmorrh.* may be ſafely cut any way, without any hurt done to its functions, if only one eighth part of it be left untouched; otherwiſe there would follow an excretion of the excrements againſt a mans will, and at laſt death it ſelf. Fiſtulaes in old people, that have run long, are not ſafely cured, unleſs an iſſue be made before they be healed up, three or four fingers above the knees, on the inſide, to evacuate the matter

that

that is daily collected. The Emrods that require manual operations, are either external or internal, which firſt of all the moſt skilful in Anatomy, *Hierom. Fabrit. ab Aquapend.* learnedly demonſtrated *in operat. Chyrurgic. titulo de Hæmorrhoid.*

Theſe appear at firſt ſight, but thoſe, unleſs you preſs the Abdomen, and hold your breath, or go to ſtool, cannot be ſeen: If they need manual operation, they both do either ſwell, or run too much.

The cure of the Emrods that ſwell, by manual operation.

SOmetimes pain, or inflammation, is joined with the ſwelling of the Emrods; and then the cure is performed rather by medicaments internall and externall, namely, with the uuguent of wilde Flax of *Horſt. Lib.* 4. *Obſerv.* 42. or other unguents, (the baſis whereof is Scrophalaria, which onely cleanſed from filth, and hanged about the neck, and worn next the naked body, doth almoſt miraculouſly aſſwage the pains of the Emrods. See *Tabern. lib.* 2. *fol.* 431, and *Craton. conſ.* 207.) rather then to exaſperate this Diſeaſe by any manuall operation whatſoever. If they ſwell much, without pain or inflammation, and lie ſecret, I take the broad iron tool (*p*) (fetched out of the nineteeth Table) and when it is very red hot, I ſo burn the Emrods, yet not touching them, that is, that they may onely feel the heat of the fire, as the Patient can well endure it: If the Patient, as oftentimes it happens, fear manual operation, with good ſucceſs alſo I ſet on the Leeches prepared, and I draw forth plenty of blood; after that I put up into the fundament *linimentum ſimplex* with a tent; and I apply a new ſponge, wet in black ſharp wine, wherein aſtringents have been boiled, and preſs it forth again, by this means to corroborate the part.

Hippocrates, for the ſaid manual operation, requireth an iron inſtrument with a round head, ſuch an one as that is, which is lively ſet forth Table XIX. Figure V. and in the following Figure, letter *q* is the mark for it; with this he drieth them all up, one after another; yet I think, that a broad head is more effectual here, becauſe the operation is ſooner ended with this; but that of *Hippocrates* is beſt, when either of the Emrods

that

that ſwel, runs; becauſe this eaſily paſſeth by thoſe that bleed; but the broad one dries up all that run with thoſe that are blind, not without great hurt to the Patients; which I would needs warn you of from the obſervations of *Spigelius*.

Sometimes the Emrods ſwell ſo, yet lie ſo high in the inteſtines, that they can by no means be ſeen, and much leſs be touched by any hot iron be it round or broad. Then if any help be ſought for by manual operation, that pipe is neceſſary to dry them up, which is pictured above Table XVI. Figure III. It is put cold into the fundament, and it is heated with a red hot pin (Table now quoted, Figure IV.) often thruſt into the pipe, that being heated, it may by degrees dry up the Emrods.

The cure of the Emrods that run too much, by manual operation.

WHen they bleed too much, they muſt be touched one by one with that pointed inſtrument (Figure VIII.) leaving only one by which the blood, that is ſuperfluous, afterwards may run forth. Their bleeding ſometimes is ſo violent, that it is impoſſible for the moſt skilfull Phyſitian to ſtop it, though he uſe revulſion and aſtringent medicaments, as well taken by the mouth as outwardly applied. I had experience of this violence at *Venice*, (where I practiſed Chyrurgery a whole year, and the Emrods come often there to the Phyſitians to be cured) upon a certain noble Venetian, who was of the houſe of the *Contareni*, a young man of 26. years old, of a ſanguine complexion, in the Spring time, it being the firſt time that ever he was troubled with the outward Emrods bleeding too much. I being called, I opened the inward vein of his right arm, and I commanded to apply dry cupping glaſſes to his back, without ſcarification; I gave him old conſerve of Roſes with Crocus Martis, to take by the mouth (not neglecting the binding of his upper parts) and I applied to the part affected medicaments that had great force of aſtringency, tempered with the white of an Egg, and mingled with burnt cotton; yet for all this the vehement bleeding continued; and the Patient, otherwiſe very red, changed to look very pale, ſo that he was in danger of his life. I propounded to this noble man, and the ſtanders by, to ſtop the flux of blood, and to ſave his life; the cauterizing of the veins according to *Hippocr. l. 2. de Hæmor. Ætius Tetrab. 4. ſerm. 2. c. 15.* and

Sen-

Sennert. pr. l. 3. p. 2. c. 13. contrary to *Hier. Fabrit. ab Aquapend* and I confirmed my propoſal by *Hippocrat. aph. 6. ſect. 1. for an extream diſeaſe, an extream remedy muſt be uſed*; and *aph. 6. ſect. 8.* Thoſe things that medicaments will not cure, the iron inſtrument will cure, that the iron inſtrument cannot, thoſe the fire can; and of purpoſe I left out thoſe words, *What the fire cannot cure, is incurable*; leſt the Patient ſhould take occaſion to doubt of his recovery. But the Patient, when he ſaw death hard by, gave credit to our old Author, and taking me by the hand, promiſed to me and to the ſtanders by, that he would admit of cauterizing, ſince there was no other means left. Whereupon I made haſt home and furniſhed my ſelf with inſtruments needfull; namely, with pointed inſtruments (Table XIX. Figure VII, VIII and IX.) and coming back, I delivered them to the ſervant of this noble Patient, that he might make them red hot; when they were very red hot, I touched ſeverally the ſmall orifices of all the Emrods that bled, and made a hard cruſt upon them, beginning with the uppermoſt, leſt the blood, running forth of thoſe that were not touched ſhould quench the hot iron. See *Ludovic. ſeptal. l. 7. animadver.* 112. very worthy to be read over.

The blood being ſtopped by manual operation, and the beſt regiment of reſtoring diet being obſerved, that noble man was reſtored to his former health; and I adviſed him that every three moneths, he ſhould ſet on four cupping glaſſes to his ſhoulders and back, with ſcarification; that nature might not, for the future, be accuſtomed to ſend down the ſuperfluous blood to the Emrod veins. Theſe things being rightly obſerved, he lived ten years free from any bleeding of the Emrods. But if Nature, before this, had been accuſtomed to open the veins of the fundament in this noble man; and been uſed to ſend the ſuperfluous blood thither, I had left one of the Emrods untouched by the inſtrument, which afterwards ſhould have been ſtopt with emplaſtick and aſtringent powders; that it might, either of its own accord, or elſe by art, be eaſily opened; and that the blood, daily abounding in the body, which is wont to be evacuated at ſet times, might be thus purged away, leſt thoſe diſeaſes may follow (which *Hippocrates* mentioneth *ſect. 6. aph.* 12. he that is cured of the Emrods that have laſted long, unleſs one of them be left, is in danger of a Dropſie or a Conſumption; and *Epidem. lib. 6. ſect. 3. text.* 33 and 34. They that are wont to bleed

at

at the veins of the fundament, are neither troubled with inflammation of the Lungs, nor eating ulcer, nor with fellons, nor little ſwellings, which are called Terminthi, from the likeneſs of Ciche Peaſon; and perhaps not with the Leproſie, nor other diſeaſes of that kind; but being unſeaſonable cured, many fall into theſe diſeaſes, and for that cauſe are in an ill caſe.)

Emrods that are ulcerated.

THoſe that are internal muſt be dried up, that they do not degenerate into Fiſtulaes; wherefore an iron pipe is thruſt into the fundament, which hath a hole on the ſide (Table XVI. Figure II and III.) and into this is put a pin very red hot (Table XVI. Fig. IV.) and it is often drawn out, with which the ulcers of the Emrods are cauterized, and the parts near are defended. The pain being abated, and the Eſchar taken away, the ulcer muſt be incarnated and conſolidated, with ſarcotick and epulotick medicaments.

Fig. VIII. ſhews the application of the Enterenchita or inſtrument with a pipe (Table XIII. Figure V.) to give clyſters with at the fundament. In the year of Chriſt 1639. on the 18. of June, the wife of *Bartholomew Abelinus*, a Weaver of *Ulma*, was delivered of a dead child, which in the privy parts had no mark to know it by, whether it were a man or a woman child; nor did there appear any way whereby this child could void its urine or excrements of the belly. In the Perinæum there hung down ſomething as long as the little finger, which like to the blind inteſtine had no paſſage through it, from the *os pubis* as far as the heel, both the feet grew moſt cloſely together, but in the other parts the child was made very comly.

Fig. IX. In the year after the birth of Chriſt 1651. on the 5. of July, about ſix of the clock after noon, in the Village *Winterbach*, in the Dutchy of *Wurtenberg*, the wife of *George Langius* a Country man, whoſe name was *Anna*, brought forth a monſtrous child, and ſo formed, as you ſee in the picture; namely with two heads, four feet, as many legs: So ſoon as this monſtrous child was born, a reverend man D. M. *Ioan. Riep*, the ordinary Paſtor of that Pariſh, did baptize it; and on the 6. day of July following, in the Church, he named it *Chriſtianus* and *Chriſtiana*; the child died at 6 a clock after noon, on the 7. of July; the Abdomen of the carkaſs and the breaſt were opened by me according

cording to art, in the preſence of D. *Chriſtopher* van *Rueff*, *Schorndorffius* Phyſitian in ordinary, *Iacob Guttelin* Apothecary there, and the Child's father (O hard heart!) and of many more; and firſt I found two ſtomacks, to both which ſeverally were faſtned the ſmall guts, which yet at the beginning of the greater guts, did conclude into one blind inteſtine, colon, and the right gut. When I had artificially taken forth the inteſtines, under the right Hypochondre, there was ſeen but one Liver only; and on the left ſide but one Spleen; but in the Reins three Kidneys, and as many Vreters of equal bigneſs, with their mouths all gaping into one bladder for the urine. As for the members of generation, there was but one Matrix with all parts neceſſary for generation; that which hung behind the fundament had no hole in it; but was ſhut up like the blind gut. In the cavity of the Thorax I found two hearts, included in ſo many Capſulaes, one Mediaſtinum which ſoparted the hearts one from another, that one lay on the left ſide, and the other on the right, the picture of which Monſter, the couſin-german, by the brother, cauſed to be drawn for remembrance to poſterity.

The laſt Table.

Of Galen's *ſling*, *a Canker of the lips*; *compreſſion of the Artery cut*; *diſtending of the foot contracted*; *binding of the arm that is ſtiff*; *the opening of a great Fiſtula in the thigh*; *the places and bands for fontanels*; *the taking out of Muſket bullets from wounds*; *the cutting of melancholy veins*, *called Vaices*; *the bringing together of the lips of wounds by claſps*; *the ſcraping away of the ſhin bone that is rotten*; *and of the ligature of the breaſt*, *which* Galen *calls Cataphracta.*

AIs *Galen's* ſling, *Lib. de Faſc. cap.* 62. namely a band divided into four parts, prepared to bind up the under lip: The deſcription of this I was willing to tranſcribe, for the good of thoſe that are ſtudious in Chyrurgery; but eſpecially for Barbers who have not the opportunity to ſee that book concerning bands,

TABVLA XXXXIII

bands, that they may know that this band, and the way of uſing it, is both the moſt profitable and moſt neceſſary for Chyrurgians to know, to cure the diſeaſes of the lips, and principally the Canker ulcerated. The middle, that is whole, lay upon the lower lip; but bring the upper parts to the chin, and from thence to the hinder part of the head; and there draw them like to the figure X, one paſſing above the other, to the top of the head; and between it and the fore-head, and deliver it to the Aſſiſtant; but the other two parts bring under the lower part of the ears, and draw them up to the fore-head, after the faſhion of the letter X; and ſo bind theſe, and thoſe delivered to the Aſſiſtant, all together.

E ſhews the lip ulcerated, and bound with the ſling band according to *Galen's* mind. The Patient was *Gallus Sigman*, a Country man of *Langenavia*, in the Juriſdiction of *Ulma*, who had an ulcerated Canker in his lips; who when, to his grief, he perceived, by many skilfull Chyrurgians, that he could not be cured of that miſchief, unleſs it were cut forth by the roots: Being a poor man, he deſired humbly from the famous Senate of that Republick where he lived, that he might be taken into the Hoſpital; and that the Canker might be cut forth, with an iron inſtrument, by the hand of the well experienced Chyrurgian *George Riedlin*; when it was cut off with the pincers, and the ulcer was almoſt cicatrized, it grew up again. The famous Senate being better informed of this growing of it again, committed the Patient to my care. This man, by reaſon of the pains of his head and limbs in the night, was much ſuſpected by me, and ſo was carried to the Hoſpital appointed for thoſe that are ſick of the French Pox. He drank the decoction of *Guaicum*, whereby the pains of his head and outward parts ceaſed, But the Canker, being dreſſed with topical remedies, did yet pitifully afflict the poor man. Then I thought fit to cool his body with drinking Goats whey clarified, becauſe it was over heat with ſweating medicaments; and then to purge him from melancholy humours, by tempring of them with this Magiſtral decoction following:

Take River water, 15 pounds.
Whole Barley, 1 pugil.
Let them boil in a cloſe veſſel till the Barley ſplit: Then add
Leaves of Borage,
Cichory,

Beto-

Betony,
Carduus,
Sow thiſtle, of each 1 handfull.

And let them boil again till 12. pound remain, caſting away the herbs: In the ſtrain'd liquor infuſe for 24 hours,

Roots of Polypoe, 3 ounces.
Pulip of Coloquintida tied up in a rag, 2 drams.
Roots of black Ellebore prepared, half an ounce.
Our Orris root,
Crud Agarick, of each 1 ounce.
Raiſins, 6 drams.
Aniſeed, half a dram.

Mingle them all, and let them boil till half be conſumed, and at the end for one boiling add

The beſt Cinamon, 2 drams.
Nutmeg ſliced, 1 dram.
Senna leaves without ſtalks, 1 dram and a half.

The ſtrained liquor is divided into nine doſes, that one doſe muſt be ſeven ounces, each of them was kept in a glaſs, oil being poured on it to ſwim a fingers breadth above it; and it was given every other day early in the morning; after which the Patient lay in his bed, well covered, untill his body grew moiſt; and an hour after he took ſome broth, and becauſe of the Coloquintida the porion was ſomewhat bitter; preſently after the taking of it, he ſwallowed a little of a roſted apple, or half an ounce of Raiſins. This Purgative doth eaſily attract, not only the humour that may flow to it, but alſo that which is already come thither. And note that by the frequent uſe of this decoction, many have been freed from Cankers ulcerated; and more have been cured that were not ulcerated. Thus much by the by concerning this decoction.

His body being prepared, I was ſo won with the Patient's intreating me, to cut off his lip, that I did it, at firſt ſight, with very good ſucceſs; but the next day I obſerved a ſmall knot, which the Pincers left, which is an inſtrument very inconvenient for ſuch manual operation.

I attempted to conſume this knot with that cauſtick powder, which *Aquapendens* got of an Empirick, and deſcribes it *Lib* 1. *Pentateuch*; but this would do no good: Whereupon I began to doubt of any certain cure, and to fear that the diſeaſe would come again, being there was ſo great appearance of it. But the Patient, as I commanded, fell to drink again of his purging decoction, every fourth day; and when the ulcer, by the help of this following unguent

Take Oil of Roſes compleat,
Of Myrtils, of each 1 pound.
Suet of a Calf gelded, 6 drams.
Juice of garden Night-ſhade,
Plantain, of each 10. drams.
Wine of Pomgranates, 4 ounces.

Let them boil untill the juices be conſumed, then ſtrain them, And

Take Ceruſs in powder, 10 drams.
Lytharge prepared, 2 ounces and a half.
Lead burnt and waſht,
Antimony prepared, of each 5 drams.
Tutty of Alexandria, 5 drams.
Camphir, 5 drams.

Mingle all in a leaden Mortar, and make an unguent. guent of Tutia, was almoſt whole (for there remained nothing but that ſmall knot) by a good regiment of diet, and well provided with outward and inward remedies, having great hope of a ſudden cure, he returned homewards with great joy. But that which I feared before, when half a year was paſt, came indeed; namely, a new relapſe, a miſchief far worſe than the former. But I think this relapſe is to be imputed unto the Pincers only, whereby I performed the operation; for this inſtrument was the moſt unfit for this operation. *Wherefore if a Canker be run over the whole lip; let the Chyrurgian, taught by mine and* Riedlinus *his errour, take heed that he cut it not off with a pair of Pincers; for it is almoſt impoſſible but that it will leave ſome root behind, from whence the diſeaſe will grow up again.*

I remember that I have ſometimes heard the moſt excellent *Adrian Spigelius* give this caution in his publick Lectures, yet I regarded it not, untill ſuch time as I found the experience of it in this Country man and another; that this caution not being obſerved, the Patients are in danger of their lives, and the Chyrurgian to loſe his credit. The ſick man being the ſecond time fallen to a relapſe before, now comes the third time to deſire my help in manual operation; and I had performed it according to *Aquapend.* his direction, with a peece of ſilver money, having a very ſharp edge, and dipt in *aqua fortis*, unleſs the veſſels round about had been ſo extreamly ſwoln, that I had cauſe to think this would be but labour in vain.

B is the uſe and application of that Inſtrument which I deſcribed before, Table XVII. Fig. III. and cauſed the picture of it to be ſet down. I have found this to be the moſt uſeful in wounds, or rather for pricks of the Arteries of the wriſt, which eaſily happen in a duel, for to ſtop the bleeding, as it ſhall be made appear underneath by a ſingular obſervation. Others take ſilver money, which they binde over the wound; but becauſe that ligature muſt be very ſtraight, (for if it be too looſe it will not ſtop the flux of blood) by reaſon of a gangrene ready to fall upon the end of the hand, and ſphacelus upon that, (for the veſſels are ſo preſſed down, that nourishment and vital and animal ſpirits cannot come to them) it ſeemeth to be very dangerous, wherefore I think they would provide better for mens ſafety, if all Chyrurgians would have ſuch an Inſtrument in readineſs, to uſe when neceſſity requireth it. At *Padua*, where the uſe of Anatomy and Chyrurgery hath been in great eſteem, and flourished for many years, in my time there was a moſt experienced man to open an Artery, who for the cure of the moſt bitter pains of the head, by perſwaſion of the Phyſitians, oftentimes cut the Artery of the wriſt, and making an evacuation of as much blood as he was ordained to do, he preſſed the wound ſo cloſe with the foreſaid Inſtrument, that not one drop of blood could come forth againſt the will of the Chyrurgian, nor yet any ſymptome otherwiſe to be feared followed upon this compreſſion.

It often hapned at *Ulma*, that by unskilful Quackſalvers, and men not worthy of the name of Chyrurgians, the Artery that accompanieth the vein Baſilica, was opened by miſtake inſtead of it, whence oftentimes there was made too great evacuation of blood, or a great *aneuriſma*, which ill cured cauſed death: wherefore if hereafter accidentally any ſuch errour happen, for the remedy of it (beſides that remedy the moſt famous Colledge D. D. *Gregory Horſtius* propoundeth in the firſt of his Chyrurgical Obſervations, which is moſt worthy to be read) ſuch an Inſtrument, which by preſſing the Artery, will ſtop the bleeding of it, that it may be applied to the Artery of the arm being hurt, in my opinion would be very convenient. In Helvetia they happily preſs down the Arteries of the temples, that are broken or cut by chance or by Art, with the convex part of the middle ſhell of the Walnut.

C ſheweth the application of the iron Inſtrument (which I took care to be printed before Table XVII. Fig. I. out of *Guil. Fabri. Hild.* his

his book of burnings) ſerving to extend the knee contracted. *Iacobus Murdel*, Son to *Iohn Butcher*, being but five years old, ſtumbled and fell upon the earth paved with flints, as he ran after his Father, and he walked up and down afterwards, and never complained of any pain untill the fourth day after, when he began to halt, and to complain of his knee that was lame; his Mother, careful enough of the boy, ſendeth for a Barber, called *Iohan. Andreas*, who preſently applied a Cataplaſme againſt bleeding of *Fælix Wurtz* his preſcription, and the next day (to diſcuſs as I ſuppoſe) he applied a three fold linnen cloth wet in hot wine and preſſed forth again. The boy thus dreſt, fell into a moſt sharp fever, which by convenient remedies rightly preſcribed by a Phyſitian, ended on ſome critical day, by an Impoſtume in his foot that was affected, namely an Eryſipelas inflammation, which went over all his leg and thigh, alſo as far as his groin, that vehemently afflicted the childe with heat, redneſs and pain. The inflammation being cured, there remained upon the knee that was bruiſed before the Fever came a huge ſwelling, which when it reſiſted all reſolving means, they tried to bring it to ſuppuration, and they opened the knee both on the outſide and inſide with a cauſtick medicament, and no matter, or elſe very little came forth. The buſineſs being thus, the ordinary Phyſitian departed, and left all the buſineſs of the cure to the Barber *Andreas*; this man dreſſed the childe with the beſt skill he had, and healed up the ulcers made with the cauſtick, and hardned the tumor exceedingly. The Mother being now more careful then ever, and finding the good man not ſufficient for this cure, and alſo doubtful, ſhe ſent for me to ask my counſel. Theſe things were by relation, but when I came, I found the tumor in his knee not unlike to that which they call *Gludch ſwam*, and the boy ſo contracted, that he could not extend his knee. Having made this prognoſtick, that this diſeaſe would be doubtful and of long cure, I began the buſineſs thus: To ſoften and diſcuſs the tumor, I did daily, for a quarter of an hour, foment the part with a ſponge wet in the following decoction.

Take Herbs,
Mallows,
Mullens,
Betony, of each one handful and a half.
Mallow flowers, one handful.

Linſeed, one ounce.
Marsh-mallow roots, two ounces.
Cut and bruiſe them, and put them in a paper.

After fomentation, I laid on the cerat Diaſinipi, which *Hierom. Fabrit. ab Aquapend.* deſcribeth *cap. de Meliceride*, and Doctor *Spigelius* corrected thus.

Take Sal Gemmæ,
Lytharg of Gold
Ceruſs, of each four ounces.
Wax and Turpentine, of each two drams.
Galbanum,
Opoponax, of each half an ounce.
Muſtard-ſeed powdered, two ounces.
Old Oyl, nine ounces.
Sharp Vineger what is ſufficient.
Make a liniment, or a ſoft cerat according to Art.

Under the hams and on the ſides, I anointed the knee with this following unguent.

Take Unguentum Evæ, two ounces and a half.
Nervinum, ſix drams.
Cerat Citrinum, one ounce.
Oyl of Earth-worms, ſix drams.
Of Foxes, two drams.
Mingle theſe for an unguent.

Take Oyl of Olives, one pound.
Marrow of an Ox leg,
Yellow wax.
Roſin of the Pine tree, of each two ounces.
Freſh Butter, three ounces.
Mingle them and make unguentum Evæ, or Anodyne, which *Foſcarinus* brought with him out of Turky.

Take juice of Tobacco ſix ounces.

Yellow

Yellow wax very new, four ounces.
Roſin, three ounces.
Turpentine, two ounces.
Oyl of Myrtles what is ſufficient.
Make a ſoft cerate.

I have the deſcription of this out of the firſt Book *Pentateuch. Chyrurgic. Hieron. Fabrit. ab Aquapend. cap. de herpete miliari.*

The knee abated of the ſwelling, by the continued uſe of the fomentation and cerate; but by anointing the ham, the Patient found no remedy for the extending the part, wherefore I applied this Inſtrument, wherewith by degrees the leg might be extended. It was an iron; which the Patient (after he hath firſt applied to ſtrengthen his knee *Ceratum Barbarum*, mingled with the Magiſtral Diaſinapi, and anointed his ham, and laid this Sparadrap upon it.

Take the cerate Citrinum before deſcribed, two ounces and a half.
The neweſt yellow Wax, two ounces.
Roſin and Turpentine of the Pine tree, of each one ounce,
Mingle all at the fire, and dip your cloth in it.)

wore night and day, every day turning the ſcrew of the Inſtrument a little, untill the leg was become ſtreight, ſo that in one year the Patient could walk without a ſtaff. The cauſe of the contraction was the ill ſituation of the foot, which they ſhould have prevented with a wooden capſula, which you may ſee Table XXI. Figure VI.

An. 1636. on the 10. day of *October*, I was called to come to a boy whoſe name was *Martin Gravius* of *Leishmens*, who ſhewed me his leg contracted toward the hinder parts, from a ganglion in his knee, which, premiſing univerſals, I brought to ſtand right in eight moneths by the ſame Inſtrument, and with topicalls applied.

D. Table XVIII. Figure V. ſheweth the uſe of the In-

ſtrument; for as for the extenſion of the arm, there is nothing better then to carry a heavy ſtone in a mans hand, ſo to bend it by degrees; I have found nothing better then this Inſtrument. The Patient was a Souldier's boy, who had his arm out of joint, and by reaſon of ill ſituation he could not bend it; this boy, as I did the others before, I daily anointed, applying the Sparadrap, and I bade him wear the Inſtrument, and he grew well within two months; and he could for his need bend his arm without any pain or hindrance at all. Wherefore let young Chyrurgians take heed, that they place broken members as they ſhould be placed; for oftentimes, beſides the contraction of the part, inflammation will follow an ill figure. See Table XXVI.

E. *An.* 1626. on the 19. day of *November*, my brother *Martin* called me to his father in law, *John Wolventer*, a Mariner of *Vlina*, and moſt skilful to ſail in the *Danow*: This very man, whom my moſt famous Colleague, D. D *Greg. Horſtius*, cured in his Chyrurgical Obſervations IX. ſhewed unto me a Fiſtula in his left thigh, (which from a contuſion was brought to ſuppuration, and being carelesly dreſſed, came to this paſs) and asked help from me. I trying the bigneſs of the Fiſtula with my probe, found it to be only ſuperficial, and long and broad enough: But becauſe theſe ſloping Fiſtulaes are very ſeldom made to ſolder together, as it is well known, the next day I attempted to cut it with the cizers called *Deceptoria*, ſpoken of before Table VII. Figure IX. (not being at that time skilled in the Inſtruments called *Syringotomi*, deſcribed Table XII. Fig. I, II, III. and Table XIV. Figure I.) when the Patient was not aware of it, thinking to fill it up with flesh afterwards: But when that operation proceeded too ſlowly by the cizers, the Mariner, perceiving the Inſtrument, removed his thigh, and with his hand thruſt off my right hand; whereupon, laying aſide the cure by this Inſtrument, I bound up the Fiſtula, a little dilated (as you may ſee in the Figure) with the white of an Egg beaten, and ſome carded flax; when the blood was ſtopped, every third or fourth daies I ſyringed it with Hydromel to waſh the cavity; and on the fifth, ſixth and ſeventh daies, I injected ſharp black Wine wherein Flowers of wilde Pomegranates were boiled, and Pomegranate pills, &c. and I bound on a new ſponge wet in the ſame liquor, and preſſed forth again, with a long roller that was three fingers broad (for a broader will not bind it ſo well;) I began my ligature from beneath, on the lower

lower parts, and I ended it above the Fiſtula on the ſound part; with theſe medicaments, that have an huge glewing quality, and the mnaner of ligature, my Brother's Father in law was moſt luckily cured in one week: And from that time I never uſed any manual operation, unleſs medicaments to cure were uſed firſt in vain; and never after that time did I uſe thoſe deceitful cizers, called *Deceptoria*, becauſe they deceive the Chyrurgian and not the Patient.

F sheweth the place for Iſſues on the arm. Fontanels are made in divers places, but thoſe that are made by cauſtick on the arms are the beſt, and ſeem to be moſt convenient; ~~and~~ therefore Phyſitians make choiſe of them before the other, namely to make evacuation of all thoſe humours which may offend mans head; becauſe theſe have the middle place exactly between the parts above and the parts below, and they hinder the riſing up of the humours unto the head; and they moſt commodiouſly make revulſion of them, and derive them that are flown up to the head, by reaſon of their convenient diſtance: and they do not onely help much for the diſeaſes of the head, eyes, ears, noſtrils, mouth, jaws and throat, but alſo for the diſeaſes of the thorax, heart and lungs. And though theſe Iſſues for the ſaid diſeaſes do help much, and are moſt commodious for the ſick, and that the rather, becauſe they can look to them, and dreſs them with their own hands; yet there are multitudes of men who condemn all Iſſues, deſpiſing their own healths, becauſe theſe Iſſues require care and labour; others hate them becauſe they ſtink; and ſome are afraid to have them burned, becauſe they fear the fire. I anſwer theſe men, that they cannot put off and on their clothes evening and morning without labour and care, nor can they void their excrements without ſtink; but as this or that is neceſſary for mans life, ſo are Iſſues for ſome people to live in health, and enjoy their lives moſt needful: And as no man repenteth his labour to put off and on his clothes, ſo no man complaineth of theſe Iſſues, but taketh great pleaſure to dreſs them, either from the delight they finde when they itch, or becauſe from day to day they clearly ſee the evacuation of the matter, which was bred by errours committed, and being kept in the body would produce much hurt; or rather becauſe hereby men regain their healths which they had loſt: and therefore oftentimes men are not contented with one Iſſue, but will have two or three, or more made,

as they finde cauſe. Add to this, that Fontanels, if they be guided by Art, do not ſtink, and made in a convenient place will cauſe no pain.

The place for Iſſues requireth four conditions. Firſt, That the Patient can ſee it. Secondly, That it be fit for ligature. Thirdly, That it may have a vein. Fourthly, That it be made between two muſcles, to prevent pain, wherewith motion is eaſily hindred.

This place is eaſily found, if the Chyrurgian doth variouſly turn and bend, and extend the Patient's arm, untill he finde the due ſeparation of the muſcle Deltoides and Biceps: Many make the Iſſue upon the Deltoides it ſelf, ſome at the end of it, others on the upper part of it; but I, for the ſaid conditions, make choice of the place marked with the letter F; namely, the diſtance between the muſcles Deltoides and Biceps; and that rather on the upper part, which is leſs ſenſible, then on the lower part, and the humour runs in short time to it.

Having found the place for the Iſſue, the way muſt be conſidered on; for a Fontanel is made with a lancet, a potential or an actual cautery: But ſince a red hot iron is moſt uſual with the Inventours of this manuall operation, I do not like potentiall cauteries, becauſe they work ſlowly, and oftentimes with great pain; nor are they ſo ſafe, becauſe we do not exactly know their force in working; but ſometimes, beſides our expectation, we finde them weaker or ſtronger then we imagined. Alſo I refuſe a cutting Inſtrument, or lancet, for the reaſons now alledged; to which I add, that cutting of an Iſſue will make it bleed, and many cannot endure to ſee their own blood. The Antients, with great dexterity, uſed the red hot iron which was crooked, and had a long handle, (deſcribed Table I. Figure I.) But when they found that that Inſtrument did not only burn the flesh, marked before by the Chyrurgian, but alſo heated the parts that are near to it, they invented another Inſtrument beſides this, that had a pipe to it that defended the parts adjoining, ſee Table I. Figure I. through this pipe, not heated, and thruſt hard upon the skin, they thruſt in a ſolid red hot iron, that it may enter as far as the Chyrurgian will have it, ſometimes deeper, ſometimes not ſo deep. *Iulius Caſſerius Placentinus* invented an Inſtrument deſcribed before

before Table I. and here it is marked with the Letter G, which hides the fire, and defends the parts near adjoining from being hutt: *And above all other inſtruments to burn fontanels, that are without the head, it is the moſt convenient, and the moſt ſafe.* Above ſix hundred Patients will teſtifie that I have done this to them, to the admiration of the ſtanders by, and to the laughter of the Patient; and ſo many are now alive who have iſſues of my making.

H is the ligature to bind upon the iſſues of the Arm; it is moſt commodious, becauſe it is eaſily put on by the Patient; moſt profitable, becauſe it preſerves the iſſue in its place; and it is moſt fair, becauſe being made of white linnen, it may be waſhed; neither is this like other bands ſo eaſily ſeen or felt.

I is the place for iſſues in the Thigh (which muſt be ſought for four fingers breadth above the knee, between the muſcle *Sartorius* and *Vaſtus Internus*) moſt fit for ligature; and becauſe the vein *Saphena* joins to it, where an iſſue is moſt profitably made for hyſterical paſſions, to make revulſion and derivation. I have cured Women this way, whoſe names I conceal, who by the ſtopping of their Courſes, were troubled with *Furor uterinus* and other ſymptoms; and more that had ulcers upon their ſhins hard to be cured; there by revulſion, but here by intercepting and deriving.

K is an inſtrument that I made moſt happily, about the beginning of the muſcle *Gaſtrocnemius*, againſt the pain of the hip. Truly the moſt excellent Phyſitian *Adrian Spigelius*, *Lib. 5. Cap. 9.* in *Human. Corp. Fabric.* commendeth the making of an iſſue, in the Calf of the Leg, with an actual cautery, by reaſon of the paſſage of the Ham vein; or for the meeting together of the beginnings of the muſcle *Gaſterocnemius*; which *Daniel Bucretius*, upon *Iulius Caſſerius Placentinus* his Anatomical Tables (which I bought, with *Spigelius* his money, from the heirs of *Caſſerius*) marked *L.* 1, Table 2. with the Greek letter π. But becauſe that place, by reaſon of its ſloping downwards, is very inconvenient to bind; I, according to *Andreas Veſalius* in *Corp. Human. Fabric. Lib.* 2. Table 10.

De

De Muſculis, choſe a place ſomewhat higher, and that not without good reaſon. For an iſſue in this place hath all the conditions of a good iſſue that *I* ſpeak of before. 1. The Ham vein, which both the Antients and latter Chyrurgians, with very good ſucceſs opened for pains of the hip; and for many more diſeaſes which *Aurelius Severinus* hath collected *Lib. de Angeologia*, *Cap.* 26. 2. Here is the diſtance between the beginnings of the muſcle of the Calf of the Leg; for that noted nerve, that runs under the knee, is not in danger to be hurt; for where the iſſue is made, that nerve going forward hath already crept deeper, that it cannot be offended with a red hot iron. 3. For the Ligature that ſtanderh faſt. 4. The Patient himſelf can govern and dreſs it when he pleaſes. It is a moſt certain thing that he who is troubled with pains of the hip, cannot eaſily be freed from them; that he can promiſe, that for the future, he ſhall never be troubled with thoſe pains any more. Yet I can rightly ſay, that after the uſe of the Bath at *Thalfengens*, commonly called *Soſunbrun*, lying in the Country of *Vlma*, by help of this iſſue, I cured myſelf, for nine years, from this pain; and may be longer, if it pleaſe God I live, taking my farewell from all opening of the hip vein, and all purgatives and ſweating medicaments, and from all topicals, which I uſed, for a whole year, by the advice and preſcription of the moſt famous Phyſitians. Wherefore if hereafter, for ſuch continued pains of the hip; outward and inward remedies be uſed to no purpoſe: by my counſel let men flie to this manual operation, with good hope of recovery, as unto a ſacred anchor; namely, to burn a fontanel in the place marked, for I doubt not but the Patient will have his health, and the Chyrurgian ſhall obtain great praiſe by it.

L is the Band fot iſſues in the Thigh and Calf to be bound with; and it is the beſt of all bands. How fontanels made ſhould be kept and rightly ordered, we might learn out of that leaf of *Aquapendens*, where he ſpeaks of it, in his work of manual operations, under the Title of Fontanels; unleſs that by the careleſſeneſſe of the Printer, to whom the Authour delivered the sheet to print, it had been loſt: Wherefore, this being wanting, let men read that moſt elegant Treatiſe, which *Hie-*

rom.

tom. Capivacius writ, concerning the right ordering of fontanels; and *Dominicus Galvauus*, a Phyſitian at *Atheſtin*, to whom, I confeſs, I am obliged for my Sparadrap:

Take of the Cerate of white Lead, or *album coctum Auguſ.* 12 ounces.
Powder of Ceruſs, 4 ounces.
Frankincenſe,
Gum Dragant, of each 6 drams.
Orris Florentine,
Benjamin, of each 5 drams.
Storax liquid,
Sweet Oil of Spike, of each 2 drams.
Venice Sope, 2 ounces.
Wax, what may ſuffice, or 2 ounces.

The Chyrurgians at *Verona* when they uſe it for men, they add a little Musk to it, to make it ſmell the ſweeter.

Mingle them according to Art, and with a new linnen cloath make a Sparadrap; with which, for twenty and two years, I have preſerved above a thouſand iſſues from all evil ſymptoms, to the admiration of thoſe that uſed it.) *de Fantanellis Lib. 2. Cap.* 13, 14, 15, 16 and 17. which I am certain was writ moſt exactly (according to the mind of his Maſter *Aquapendent*) yet in Italian, being worthy to be turned into Latine.

Some mightily extoll that Cerate that the great Duke of *Hetruria*, keeps his iſſues free by, from all ſymptoms that might fall upon them:

Take juyce of Ivy, 3 pound.
Tobacco, 1 pound.
Turpentine,
Pine Roſin,
Unguent of Roſes Meſue,
Yellow wax, of each 1 pound.
Oil of Nutmegs, 2 ounces.
Powder of ſweet Cyprus, 1 ounce.
Choice Ceruſs, 1 pound.
Mingle them and make a Cerate.

M is the Pincers for wounds with Gun-ſhot, to draw out the bullets that lie deep in; it is handſomelie made, and I deſcribed it before to the life, Table XIV. Figure IX.

N sheweth the uſe of the ſaid Pincers, and the way to apply it, which is this: Pull forth the wimble, and let down the outward pipe toward the ſpoons, ſo that the Inſtrument may be shut, and may reſemble the form of an Inſtrument, printed Table XIV. Figure XI. This being done, the outward pipe muſt be anointed with Oil of Roſes, and the Inſtrument muſt be gentlie thruſt into the wound with the Chyrurgians right hand, untill ſuch time as the toothed end of the ſpoons lay hold of the bullet; then the Chyrurgian shall hold the Inſtrument between his fore-finger and thumb of his left hand, and with that he shall preſſe againſt the bullet as hard as the Patient can endure it, that it may not fall off from the Pincers; after this, with the fingers of his right hand, he shall put in the Piercer by the hole of the round cover, ſo far as to the bullet, and he shall turn that about, and by degrees faſten it in the bullet: But ſo ſoon as the Chyrurgian knoweth that the Piercer ſticketh faſt in the bullet, he shall by little and little draw up the outward pipe, and shall preſentlie put it down again, that the ſpoons opening may take in the bullet, and by holding it faſt when it is in, may help the Piercer to bring it forth. Theſe things being rightlie performed, the Piercer and both Pipes, and the whole Inſtrument, with the bullet ſticking and received in, muſt be drawn out by the way the Figure repreſenteth unto you.

Note, that many make mention of and commend the Inſtruments, whoſe Figures you find pictured before Table XV by which, if the bullet falleth off, a nerve, vein or arterie is eaſilie hurt; wherefore they that have not at hand thoſe two Inſtruments, Table XIV. Figure X, XI. (which for above twenty two years, during the German wars, I happily uſed in curing many Souldiers) shall do excellently well, who for other Pincers uſe the right Cranes bill, Table XI. Figure VI. or the blunt one with an angle beat backwards, Table IX. Figure X. for with theſe the Chyrurgians at *Padua* do frequently take forth bullets out of wounds, not doing any hurt. *Read the moſt exact Book of Francis Plazzon, of wounds made with Gun shot.*

O sheweth

O sheweth the cutting of the melancholy veins called Varices, according to the minde of *Aquapendens*, which yet though it be horrid to our Germans, ſo ill ſymptomes may eaſily ariſe from it. Whileſt I ſtudied at *Padua*, I ſaw a Country-man in St. *Francis* Hoſpital, endure this manual operation with great profit, under the hand of the moſt excellent *Spigelius*.

I once, in imitation hereof, tried the like manual operation in my Country; but by an error of the Patient (who ſtirred too much, whereas he should not ſtir at all) there followed great inflammation and vehement pain, which forbids me to uſe it, becauſe the event did not anſwer my deſire; and the Patient and his Parents wished that I might be taken and tormented with the like inflammation: Having once ſuffered ship-wrap of my credit, ever after I dreſſed theſe varices upon the extream parts, with only topical means, laid under ſtockings made with dogs skin.

P sheweth a wound made very deep in the thigh with a Perſian dart, and it is united with four ſtitches or loops, and in the moſt ſloping part of it, having a hole, into which is thruſt the tent Q, to keep it open for the matter to come forth.

R sheweth how to ſcrape away the rotten shin bone with raſps, deſcribed Table VI.

Marsin Schmidt of *Oellingen*, a boy of eleven years of age, complained of a moſt vehement pain in his right shin bone, and that by two holes the ſtinking matter ran forth; one of theſe was about the inward ankle-bone. and the other about the out ward ankle-bone. This ſore was dreſſed by the ordinary Barber of that Village, for a diſlocation of the foot. In the year 1640. upon the 16. day of *December*, the ſick boy was taken into the Hoſpital at *Ulma*; and I, at the command of the famous Senate, did viſit him; and I preſently found, that this infirmity was no diſlocation, but the corruption and eating away of all his shin-bone, which I intended to cure. The firſt day therefore I preſcribed him a good regiment of diet, and this following potion.

Take Syrup of Roſes ſolutive, one ounce and a half.
Electuary Linitivum, ſix drams.
Decoction of Flowers and Fruits what may ſuffice.
Mingle all for a ſmall potion.

By this he had five ſtools of very watry matter. On the 22. of *December* I cut his leg with an inciſion knife, from the head of the shin-bone as far as the inward ankle-bone, doing no hurt

to

to any vein, artery, nerve or tendon; and with the nails of my fingers I ſeparated the Perioſtium from the bone; and I bound up the wound with Hemp hards, ſpread with an aſtringent medicament, made of the white of an Egg beaten with Roſe-water, and the aſtringent Powder of *Galen*, and with a band having two ends. On the 23 day, when the blood was ſtopt, I unbound the wound, and looked into it, and I ſaw that my judgement did not fail me in it; for not only the fore part of the shin-bone was corrupted outwardly, but the hinder part was corrupted as far as the marrow of it; and after that I preſently took forth ſome pieces of the shin-bone corrupted with my pullers, and I bound up again the wound with my medicament and ligature, by reaſon of the vehement crying out of the Patient. On the 24. day I ſcraped the corrupted bone with my ſcraping Inſtruments, and I found the lower end of the shin bone very much corrupted and ſtinking: wherefore I purged the shin-bone with Decoctum Divinum, and I ſtrewed upon it the Powder of Birthwort, and Orris Florentine, and I bound up the wound covered with Ceratum Diapalma. On the 25. and 26. daies, I ſcraped the bone by reaſon of the great corruption, and I drew forth with my pullers many pieces of the rotten bone. On the 29. day, I cut off with my cizers, Table XX. Figure I. from the lower and inward end of the shin bone, a great part that was rotten. On the 30. day, the ſtink of the bone did ſomewhat abate, by the uſing of Decoctum Divinum, On the 31. day, after that the pain of the foot and ſtink was abated, I fed the Patient with glewing diet, to breed a callous; and I laid upon the wound Ceratum Divinum to bring it to cicatrize. From this time, untill the 4. of *Ianuary* of the year 1641. from the lower end of the shin-bone, or external ankle-bone, rotten matter ran forth. On the 6. day there appeared ſolid fleſh about this hole. On the 7. day the wound was handſome; and Nature wholly ſeparated the shin-bone from the lower part unto the middle of it, where it was rotten; when the bone was ſeparated, the wound grew well in a moneths time.

Of Nodes coming from the French Pox.

NOdes of the French Pox, if they will not be cured by medicaments with ſarſa, given by the mouth (which far more eaſily and quickly cures all knots and accidents of the French Pox, than guaicum doth) then this following Cerate, to excellent profit, is applied to them:

Take

Take Quick-ſilver killed with faſting ſpittle, half an ounce.
Powder of Indian Tobacco, half a dram.
Plaiſter Diachylon with gums,
Cerat Oxelæum.
Citrinum, of each 1 ounce.
Diſtilled oil of guaicum, 1 dram.
Mingle them and make a plaiſter.

But if for all the uſe of this remedy, they continually ake, and are not diſcuſſed, it is a moſt certain ſign that the bone under the knot is corrupted, and therefore it is neceſſary to make inciſion upon the node, along the shin bone, with an inciſion knife, Table II. Figure II. and the bone being uncovered, muſt be ſcraped away with ſcraping tools where it is corrupted. Such knots as they ſeldom happen in *Germany*, ſo the manual operation for the cure of them is not admitted, but to thoſe only that deſire it in their moſt bitter torments: But in *Italy* moſt frequently and happily, men are cured by manual operation: Wherefore though I had many, both noble and ordinary people, under my hands to cure, who were tormented with nodes of the French Pox, yet I was ſuffered to uſe manual operation upon very few of them. But becauſe at *Padua* I have ſeen this operation ſo often, where multitudes are alwaies complaining of pains in their shin bones, there I often uſed it; and I would needs inſert, very briefly, into this work of ours, the way uſed by thoſe of *Padua* in performing this operation, that Students in Chyrurgery (for whoſe ſake I write this) may know how ſpeedily to help their Patients that earneſtly deſire manual operation from them, when there is no remedy almoſt left. The firſt day they cut the venerious node, with the knife mentioned, upon the length of the shin bone, unto the bone it ſelf; then they dilate the wound with hempen hards, wet in the white of an Egg beaten; and they ſwath the leg about with a convenient ligature, to keep off a flux of humours: On the ſecond day they take off the hards, and lifting up the wound artificially, having firſt very well defended the ſound parts about it that they may take no hurt, they fill it with a cauſtick (I could rather wish it were with that which *Ambroſ: Paræus* deſcribeth by the name of *Holoſericum Lib. 25. cap. 32.*) After this they cover it with a plaiſter extended all the breadth of it, but not going round about the leg; and they bind the leg again, with a preſſing band,

band, according to Art. On the third day removing all theſe, they apply things to make the Eſchar fall off; when that is taken away they ſcrape away the rottenneſs unto the quick; and then with drying powders they cover the bone with flesh. They firſt cut the node, that the cauſtick may ſooner come to act; yet inciſion is not alwaies neceſſary, unleſs it be for thoſe who will hardly beleeve the Chyrurgian when he tells them that the bone is rotten, untill ſuch time as they ſee it or touch it themſelves.

S repreſents the Curashier ligature, which borrows the name from the ſimilitude it hath to a Roman breaſt plate; and it is profitable for thoſe who muſt have a band, near the throat, upon the broad shoulder bone, breaſt, back or ſides. But a ſwath with one end is thus rolled about: Firſt it is put under the arm pit (*Galen l. de Faſciis* 79.) then it is brought ſlanting over the breaſt, near that place where the throat is joined with the breaſt bone; then by the hinder part of the neck, to the broad shoulder bone of the oppoſite shoulder; and ſo to the arm-pit under that; and from that to the hinder part of the neck that is above the part; where the band was firſt laid on, ſo that near the hinder part of the neck, there may be made a croſs like to the letter X. after this it is carried a ſlant to the broad shoulder bone on the other ſide, and to the arm-pit; and from the arm-pit, to the hinder part of the neck, and upon the vertebra of the neck, it may repreſent the letter X; then again it is brought under the arm-pit, and ſlantingly near to the part where the throat joins with the breaſt bone; ſo that here alſo there muſt be made the likeneſs of the letter X; and near the hinder part of the neck, and above the broad shoulder bone, and under the arm-pit, that it may repreſent the letter X four times; namely once before, once behind and twice near the throat. And by the ſame reaſon it is brought about as oft as need is; then it is wound round about the breaſt and the ſides ſo, that the whole ligature repreſents a breaſt plate.

And thus, by God's permiſſion, in theſe 43. Tables, I was willing to ſet before all men that deſire to be inſtructed, and to deſcribe and publish the beſt way I could, being led by infallible experience, the delineation and proper way of uſing my Chyrurgical Inſtruments.

OBSER-

A

CENTURY

OF

Chyrurgical Operations.

Confirming and clearing what hath been briefly mentioned in the Deſcription of the foregoing Tables.

OBSERVATION I.

Of a wound in the Head with a depreſſion and large Fiſſure of the Skull.

IN the Year, 1637. The 9th. of *January*, about ſeven at night, *John Happel* of the City of *Ulme*, a Quartermaſter. Being of a hot and moiſt temperament of body, and in the two and thirtieth year of his age, was wounded in a Duel, by a Trumpeter, receiving ſeven wounds, one of which was upon the outward part of the Radius of the left arm near the wriſt: the other ſix in his head; the firſt of which was behind his left ear, the ſecond about the Coronal Suture, the third near to the Sagittal Suture, the fourth and fifth upon his fore-head croſs-wiſe. Theſe were all ſuperficial, or in the Skin, or at leaſt made only with the edge or point of the ſword; but the ſixth was in the temporal Muſcle of the right-ſide and very dangerous: for the ſword being turned backward, the wound was made by the hilt, the leſſer part of the Pommell driven in, and the Skull or Cranium hereby fractured and depreſſed. A Chyrurgeon of the

City dreſſed theſe wounds after the ſame manner as ordinary wounds uſe to be.

Upon the tenth by the command of the Conſul, I viſited him, and made ſlight of all theſe wounds, except that in the temporal Muſcle; neither was I deceived in my opinion: for I found the Skull to be depreſſed with the broad bended probe deſcribed (Tab. IX. Fig. VI.) whereupon I preſently put a piece of new Spunge twiſted about into the wound, that it might be dilated; I ſprinkled the powder of Orris, or Flower-de-Luce of Florence, and Birthwort upon the bone, I applied a Digeſtive to the lips, and upon that Diapalma, and a convenient Cataplaſme.

Thoſe wounds about the Coronal and Sagittal Suture, I did alſo ſomewhat dilate, putting in Lint with a Digeſtive, and a Searcloth of Diapalma over it; I made uſe of that Bandage, or rowler deſcribed, Tab. XXXI Fig. IX, X. The other I dreſſed as ſimple wounds; as to his dyet, his meat was Panado, decocted Barley, and Damask Pruans: his drink this following Magiſtral Barley-water.

Take of Barley half an ounce.
Corinthes, two ounces.
Annis ſeeds a dram and a half.

Boyl theſe gently two hours in three meaſures of Fountain water, and before it be cold add two drams of Cinamon, and afterward temper it to the Palate, with tincture of Roſes, and Pomgranat wine; in the evening he uſed this Glyſter to looſen his belly, having been very much bound for five days.

Take of Mallows,
Violets,
Betony,
Pellitory of the wall, of each an handful.
Fennil ſeeds,
Citron-ſeeds of each a dram and half.
Flax ſeeds ſix drams.
Marſhmallow Roots, half an ounce.

Boyl this in a ſufficient quantity of water to ten ounces: and to it being ſtreined out.

Of hony of Roſes an ounce and half.
Lenitive Electuary, one ounce.
Oyl of Violets.
Oyl of Camomile, of each an ounce and half.

Mix

Mixing them according to Art, and let them be made into a gentle Glyſter, whereby the Patient may not be too much diſturbed.

Upon the twelfth day at ten in the morning, by reaſon of an unquiet night, and a greater ſwelling and pain about the wound. I declared to the Patient and the ſtanders by, that it was neceſſary to dilate the wound in the temporal Muſcle with an Inciſion Knife, and the wound being bound up again as before, I preſcribed to the Patient by reaſon of a bitterneſs in his mouth this following Syrup to purge Choler.

Take of

Looſening ſyrup of Roſes two ounces.
Extract of Rubarb a dram and half.
Extract of Diacarthamum half a dram.
Creme of Tartar one ſcruple.
Black Cherry water as much as ſufficeth by mixing to bring it into a liquid ſyrup.

This gave him five ſtools of a bilious matter.

The thirteenth day he was ſomewhat better then the day before, and I bound up the wound the ſame way as formerly.

Upon the fourteenth day the Patient complained of a great pain in the wound of the temporal Muſcle, and therefore together with the Chyrurgion who was called at the firſt, we determined to dilate the wound with an Inciſion Knife according to the length of the Fibres of the temporal Muſcle, in form of a Triangle, or the letter V, Tab. XXXI. Fig. XI. that the Skull near to its depreſſion might be more conveniently penetrated by the Trepan, and be raiſed up by the putting in of the Levator, Tab. XXXII.

Upon the 15. and 16. by reaſon of the painfulneſs of the wound and the new Moon I bound up the wound as before.

The ſeventeenth, for the pain which the matter cauſed which found no way to get out, (for the wound was too narrow) he made uſe of his Lenitive Glyſter.

The 18*th* day the Patient having had an unquiet night, I dilated the wound of the temporal Muſcle in the form of the letter V. with a ſtreight Inciſion Knife, Tab. II. Fig. XI. I ſepatated the Pericranium from the bone with my nails, I filled up the cavity with Balls of Hemp hardes moyſtned with the whites of Eggs ſtirred up together, and ſprinkled over with an aſtringent pouder, I anointed the parts about it with Oyl of Roſes, and put on a Bolſter of Linnen dipped in red Wine and preſſed out, and alſo the rowler or bandage before mentioned.

The nineteenth day the blood being quite ſtopped after the inci-

ſion of thoſe parts which cover the Skull, I ſhewed to the ſtanders by, the depreſſion of the Skull which I foreſaw, and declared the neceſſity of making perforation.

On the twentieth I perforated the Skull with the Trepan near to the depreſſion and the Coronal Suture, I made the ſides of the hole ſmooth with a lenticular Inſtrument deſcribed Tab. XI. Fig. VII. and putting in a ſmall Levator. Tab. XXXI. Fig. VII. I lifted up the depreſſion of the Skull, I appiyed to the thicker Membrane a round piece of red Silk dipped in Oyl of Roſes lukewarm faſtned to a thread, Tab. XXX. Fig. VIII. To the Skull a Cephalick pouder, and dry Lint; to the lips Lint covered with a Digeſtive, and over that Diapalma, and the Cataplaſm of Hippocrates.

On the twenty firſt, both the Wound and the Patient were better, and he confeſſed that he had ſlept all night, therefore I applyed again to the thicker Membrane red Silk dipped in Oyl of Roſes, and faſtned to a thread; to the Skull, Pouder of Round Birthwort and Flower-de-Luce of Florence, to the lips this digeſtive.

Rozin of Turpentine waſhed in Betony-water two drams and a half, and the yolk of an Egg; adding over it Diapalma and the Cataplaſm.

From the twenty ſecond to the twenty ſixth, the Patient went on well as to his wound.

Upon the twenty ſeventh, I cut out four pieces of the Skull preſſed down, which yeilded not to the Levators delineated in *Tab.* XI. but with a new Inſtrument *Tab.* IV. *Fig.* XI. and applyed to the thick Membrane by reaſon of ſome corruption, the Silk dipped in a Liniment, which conſiſteth of Syrrup of red Roſes, and ſome drops of Spirits of Wine, and Turpentine, eating away the fleſhy excreſcenſe with Pouder of burnt-Allum.

On the twenty ninth for the purging away ſerous and bilious humours, with which his body abounded, I preſcribed this following Infuſion.

> Take of the beſt Rubarb one dram,
> Agarick newly made into Troches a dram and half.
> Leaves of Senna of Alexandria, half an ounce.
> Ginger, and Creme of Tartar, of each half a ſcruple.
> Borrage flowers half a pugil.

Infuſe theſe a whole night in a convenient quantity of black Cherry-water, adding to it being ſtrein'd out, an ounce and a half of the beſt Manna.

This brought away a great quantity of ſerous humours

On the twenty ninth and thirtieth, the Wound and the Patient were

were in good condition. On the third of *February* by reason of irregular Diet he fell into violent pains of the Collick, so that he could not sleep in four days time, yet after the use of this Glyster.

Of the carminative decoction ten ounces.
Hony of Roses,
Hony of Rosemary-flowers, of each an ounce.
Lenitive Electuary ten drams.
Oyl of sweet Almonds,
Oyl of Rue, of each an ounce and half.
Mix them for a Glyster.

The pain decreased, till the evening, when he made use again of this Glyster; the wound went on well as in the foregoing days, and red flesh grew upon the dura Mater, and in the middle between the two Tables of the Skull. On *February* the ninth, after he had taken a potion made of three ounces of Oyl of sweet Almonds, two ounces of Manna, and an ounce of Camomile-water; the Collick which had much tormented him somewhat abated: for he had passed the whole night without sleep. On the tenth he used a Bath of fresh water, in which a Bag with these ingredients were boyled.

Take of
Mallows,
Camomile,
Pellitory of the wall,
Speedwell,
Flax seeds,
Carui seeds,
Fennel of each an handful.
Sow them into a Bag.

With this the Patient was better. On the eleventh day he vomited a great quantity of Choller, in the evening the ordinary Glyster was given again, after the coming away of which, the vomiting (dangerous in wounds of the Head) and the pains about his Stomach ceased; but notwithstanding this, he could not sleep: I ordered therefore four grains of Laudanum Opiate, with the Magisteries to be taken in conserve of Roses, upon which he slept six hours very quietly. I dressed the wound when filled up with flesh, with Lint and Ceratum Divinum, that it might come to skin.

Upon the fourteenth and fifteenth, he was well; but because he abounded with serous and bilious humours, he took this purging powder in Wormwood Wine.

Take of,
The beſt Rubarb poudered, two ſcruples.
Of black Mechoacan, half a dram.
Creme of Tartar, half a ſcruple.
Mix them, and make them into a Pouder.

Which, gave him ſeven Stools, and brought away the peccant humours. Upon the 16, and 17. all things were well; on the 18. the Patient went abroad without leave, and the great coldneſs of the Air brought his pains of the Collick again; which, upon uſing the forementioned Bath, ſoon ceaſed. Upon the 19. the Wound being totally healed, cicatrized, or covered with the skin, the Patient being well provided againſt the injuries of the Cold, walked abroad in publick, without relapſing again any more into the Collick.

OBSERVATION II.

Of a Wound on the Head, with an Inflamation of the Pericranium, and a doubtful Fiſſure of the Skull.

IN the Year 1638. on the 15. of *October*, by the command of the Conſul, I went into the houſe of *John Jacob Hecking*, Citizen and Tayler of *Ulme*, whom I found in bed, afflicted with four Wounds on the head; of which, one was in the Synciput, or fore part of the head, on the left ſide, with a great inflammation of the Pericranium, which tended to Corruption, and a fracture of the Skull: the other three were ſimple wounds: all theſe were preſently dreſſed by a Barber, as ſimple Wounds uſe to be. Upon the 16. (which was the ſecond day from the hurt) by reaſon of the great putrefaction, and inflammation of the Pericranium, and the Fiſſure of the Skull; of the penetration of which, we were yet uncertain. I dilated the Wound in the Synciput with an Inciſion-knife, in the form of a Croſs. *Tab.* XXX. *Fig.* IX. and bound it up with Aſtringent Medicines. The third day, the bloud being ſtopped, I ſcraped the Fiſſure of the Skull with my paring Inſtruments. *Tab.* XXX. *Fig.* X. On the tenth, I ſcraped upon the chink, or crack ſtill deeper, and yet the mark of the ink made with a pen upon the Fiſſure remained, which with no ſort of paring Inſtruments could be taken out. In the mean time, by reaſon of his being bound, and of the flux of humours to his breaſt; I preſcribed this gentle

gentle Potion, that the humours might not be ſtirred too much.

Take of

Looſening Syrup of Roſes, two ounces.
Lenitive Electuary, one ounce.
Black-cherry Water, as much as is convenient.
Mix, and make them into a Potion.

With this he voided ſeven times bilious matter. On the fifth day looking upon the wound, and the Patient holding his breath, a kind of ſerous matter, with ſome drops of blood, flowed out at the fiſſure, which was deeply ſcraped down with the paring Irons. Things being thus; I called to mind the Golden words of our Old Man, in his book of Wounds, *Text* 22. who ſaith, *Where the Cleft goeth deep in, nor can be taken out by ſcraping, in this caſe, you muſt proceed to the cutting, or perforating of the Skull.* And *Text.* 28 *When any one underſtanding a Bone to be cleft, broken, or bruiſed; and through Errour hath not ſawed it away, and perforated it,* &c. Amongſt the more Modern Anatomiſts, and Chyrurgions, *Hieronym. Fabric. ab Aquapend.* and his Maſter *Fallopius*, do judge, that thoſe great and cruel Symptoms are not to be expected; which our Barbers with ſo much danger to their miſerable Patient, do often very imprudently wait for. *Fallopius* is not ſolicitous for contuſions made on the outward table of the Skull; but declareth, *That thoſe which reach to the middle, can by no means be without danger: by reaſon that corrupt bloud may there be gathered together; which deſcending upon the thicker Membrane of the brain, may corrode it.* For theſe Reaſons therefore, upon the ſixth day I made a hole through the Skull with a Trepan, neer the Fiſſure, *Tab.* XXXI. *Fig.* V. and the hole being made ſmooth with a Lenticular Inſtrument, *Tab.* XXXI. *Fig.* VII. I apply'd to the thicker Membrane a round piece of Silk dipped in Oyl of Roſes, and faſtned to a ſtring, *Tab.* XXX. *Fig.* VIII. a Pouder and dry lint to the bone, a Digeſtive to the lips of the Wound, and over it a Diapalma and a Cataplaſm: in the evening the Patient was better than in the morning, for the pain of the Adnata of each Eye was more remiſs, of which, before the perforation of the Skull he much complained.

On the ſeventh day it was well with him; and he complained of nothing but a ſmall Cough, and a heavineſs about his Eyes. The Wound being unbound, looking upon the thicker Membrane of the Brain, there came ſo great a ſtink out of the hole made by the Trepan, that I could ſcarce dreſs him: Having cleanſed the Wound with wool, the thicker Membrance was ſomewhat ſlimy, and corrupted on the top; for which corruption, Oyl of Roſes ſeemed not ſufficient.

Wherefore in this compound Medicine which might more ſtrongly reſiſt the putrefaction of the Membrane:

Take of,
Syrup of Red-roſes, two drams.
Turpentine waſhed in Betony water, one dram.
Spirit of Wine, ſix drops.
Mix them into the form of a Liniment.

I dipped a circular piece of Linnen, and applyed it lukewarm to the Membrane, *Tab.* XXXI. *Fig.* VIII. to the bone, Lint and Pouder of round Birthwoort and Orrice, to the lips a convenient Oyntment, and over it Diapalma; and a Cataplaſm (which is made of Bean-meal, [illegible]-meal, crums of Bread, Red-wine, and Oyl of Roſes.) and alſo [illegible] called Cancer, *Tab.* XXXI. *Fig.* X. Upon the eighth [illegible] better, and the ill ſmell of the Membrane was ſomewhat

On the tenth, he took a Potion which gave him ſix Stools. On the twelfth, by the continued uſe of the Liniment, the thicker Membrane of the Brain inclined more towards a red colour, than the day before: I drew out that ſlimy and half-corrupted part of the Dura Mater which was ſeparated on all ſides, with the Pincers, *Tab.* IV. *Fig.* I. through the hole. From the fourteenth, to the twentieth he continued well. On the 20. of *November*, the Skull threw off a bone, which, becauſe it was ſeparated from the inward Table of the Skull, I drew out with the Pincers and healed up the Wound by the help of the Ceratum Divinum. On the twenty ſeventh, the Patient being reſtored to his former health, returned me many thanks for the Pains I had taken.

OBSERVATION III.

Of a Wound on the Head in the Temporal Muſcle, with a very large cleft in the Skull, and Inflammation of the Dura Mater.

John Anwander, a Barge-man, of *Kirchdorff*, in the Year 1633. on the third of *January* in the evening, was wounded with a broad Sword in his left Temple, ſo that the Fiſſure of the Skull was ſo large, that I could eaſily lay [illegible] my fore-finger. The Patient, the next day, was carried into the ho[illegible] of *John George Bauler*, a Chirurgion; where

where I preſently applyed to the inflamed Dura Mater, an oblong piece of Silk dipped in Oyl of Roſes; to the bone, the Cephalick Pouder with dry Lint; to the Wound, a Digeſtive, Diapalma, (Linimentum ſimplex was alſo uſed with benefit) a Cataplaſm, and the Band, called Cancer; of the Digeſtive and the Cataplaſm applyed, this is the deſcription.

Take of,
Roſin of Turpentine waſhed in Roſe water, two drams.
Oyl of Roſes, one dram.
The Yolk of an Egg.
Mix it for a Digeſtive.

Take of,
Barly-meal,
Bean-meal, of each ſix ounces.
Crums of Houſhold-bread, four ounces,
Pouder of Roſes, half an ounce.
Oyl of Roſes, three ounces.
Oxymel ſimple, and Red-wine, of each as much as ſufficeth.
Mix, and make them, upon the fire, into the form of a Cataplaſm,

In the evening the Patient being forced for the Revulſion of the humours, admitted of this following Glyſter.

Take of
The decoction of the Emollient Herbs, ten ounces.
Pulp of Caſſia newly drawn out, one ounce.
Hony of Pale Roſes, an ounce and a half.
Oyl of Violets, and Camomile, of each one ounce and a half.

On the third day the Median Vein of the left Arm was opened; and five ounces of blood taken away: his dyet was ſlender, Panado and boyled Barly; his drink was the Magiſtral Barly water, to the which, for the taking off his thirſt, he ſometimes mingled two or three ſpoonfuls of the following Syrup.

Take of,
The Syrup of the juice of Citrons,
Syrup of the ſharp Pomegranates,
Tincture of Roſes, of each three ounces.
Mix them in an earthen Pot or Glaſs.

The

The Wound being unbound, seeing that the inflamation of the Membrane remitted; we bound it up again with the same Medicines and Bandage.

The 4th for the bitterness in his mouth, of which the Patient much complained, I prescribed this loosening Potion.

Take of,

Loosening Syrup of Roses, two ounces and a half.
Of Manna, one ounce.
The Electuary of the juice of Roses, two drams.
Blak-Cherry water, as much as sufficeth.

Mix them for a Potion.

With which, the Patient voided very bilious matter. On the fifth, he was better, and the inflammation of the Dura Mater went off. On the *6th* I applyed to the Membrane, Linnen Dipped in Syrup of Red-Roses; and added hony of Roses to the Digestive for the lipps of the Wound, and with these I dressed the Wound and Membrane daily, till both were sufficiently cleansed. On the 10. the Wound and Membrane were very fair, and therefore omitting the Linnen, I incarnated the Wound with Betony Oyntment, and cicatrized it with the Ceratum Divinum, on the six and thirtieth day the Patient began to complain of a pricking pain about the part affected, by reason of a Scale of the bone which nature had separated, which I drew out with the Pincers. By these few remedies the Patient being most dangerously wounded, in a short time, without manual operation, was most happily restored.

OBSERVATION IV.

Of a dangerous Wound dividing the Forehead-bone, Cured by the Trepan. I have not made any scruple to transcribe this following Observation from pag. 359. *of the later Observations of D.* Gregory Horstius.

IN the Year 1626. on the 11th of *October*, *George Seitz.* in the Village of *Edelhausen*, being about forty years of age, received a great Wound, in the night time, upon the fore-part of his head; and happening presently upon an Empirick, who not observing the penetration, or Fissure of the Skull; strove to heal up the Wound, with Sarcotick Medicines, after his fashion. But the Symptoms encreasing daily, by the perswasion of his Friends, he comes to *Ulm*: and on the twentieth of *October* sends for me, and for my most eminent Col-

Collegue, *D. Johannes Sculteius*, a perſon well verſed in Chyrurgical Operations. Conſidering therefore of the Circumſtances, we were afraid of ſome foul matter under this fair appearance; whereupon forcing open the Wound, we found the Skull divided through both the Tables, and under it a corrupted matter gathered together; which, upon ſtopping the mouth, and blowing through the noſe, iſſued forth. Having made our prognoſtick, we declared it neceſſary to apply the Trepan; encouraging the Patient, ſeeing he was yet ſtrong enough to admit it. On the 21. of *October*, being purged the day before with Lenitive Electuary, we ordered the skin to be divided according to the tendency of the fibres of the Muſcle of the forehead, or eye-brows; not croſs-wiſe, as it uſeth to be, leſt by ſuch a diviſion the fibres of the foreſaid Muſcle being hurt, the upper eye-lid might fall down, as I had obſerved it on the ſeventh of *March*, 1614. upon a fall from a high place whereby this Muſcle, in a certain womans forehead, was bruiſed. Making therefore a ſufficient inciſion, the skin was ſeparated from the Skull with the fingers, and the Wound bound up with Lint ſprinkled with an Aſtringent Pouder, and moiſtned a little outwardly with the white of an Egg. On the 22. the bloud being ſtopped the Trepan, *Tab.* XXXI. *Fig.* V. was applyed by my Collegue. The Dura Mater appeared alſo ſomewhat hurt and inflamed, thin corrupted bloud boyling out at a little hole of it: we endeavoured therefore daily to help the inflammation, and to wipe away the corrupted bloud, not neglecting, in the mean time inward gentle evacuations; as alſo, the ordinary ſpare Diet; by which means he was perfectly recovered after a fortnight, or three weeks, enjoying his health now this three years, as well as before. It is maſeſt therefore, that the uſe of the Trepan may be admitted, not only in the beginning, but in the progreſs of a Diſeaſe, if the Patient be not too weak.

OBSERVATION V.

Of a Wound in the Head, with a very great depreſſion of the Skull.

IN the Year 1634. In *April*, *Martin Kuntz* of *Durcha* in *Miſnia*, received from a Captain, a Wound with a great Chain upon the right ſide of the hinder part of his Head, near to the meeting of the Coronal and Sagittal Sutures; which did not only bruiſe the Pericanium, but alſo depreſſed a great part of the Skull: this depreſſion,

by

by reaſon of the great quantity of blood, was not at firſt taken notice of by Barbour, and ſo conſiderable a Wound as this was ſuffered fourteen days no otherwiſe than as a ſimple one. Upon which many cruel Symptoms hapned; things being thus, they ſent for my moſt eminent Collegue *D. Gregory Horſtius*, and my ſelf: and coming to the Wound we found a very great depreſſion of the Skull about the Sagittal, and Lambdoidal Sutures, accompanied with a Paraphrenital Feaver, and a pain and giddineſs of the Head; upon conſulting therefore we agreed to proceed in the Cure, by laying open the skin, and perforating the Skull. In the evening the Patient was bound, made uſe of a cooling and moyſtening Glyſter.

On the ſixteenth, taking off the dreſſing, and looking upon the Wound, I touched the depreſſion gently with my Finger, upon the Patient preſently complained of a pricking pain. I made a mark on the skin of the Figure of a Croſs, and cut it open with a ſtreight two-edged Knife *Tab.* II. *Fig.* XI. I ſeparated the Pericranium from the bone with my Fingers, and the Wound being dilated, I bound it up with Hemp hards dipped in a Medicine made of the aſtringent Pouder deſcribed by *Galen*, ſtirred up with the white of an Egg.

On the twenty ſeventh, the blood being ſtopped, and the ſtupes removed, we found ſo great a depreſſion of the Skull, that we were forced to perforate the Skull ſeven times with the Trepan round about the depreſſion, and to cut out the ſpaces between the holes with a large pair of cutting Pincers *Tab.* XX. *Fig.* I. to be ſeen alſo in the Skull, *Tab.* XXXII. Theſe things done, I ſmoothed the edges of the Skull, on all ſides with a lenticular Inſtrument *Tab.* XXXI. *Fig.* VII. I applied to the Dura Mater a round piece of Silk dipped in Oyl of Roſes, to the bone, Pouder of the roots of round Birth-wort, and Flower-de-Luce of Florence and dry Lint, to the lips likewiſe, covered with a Digeſtive made of Turpentine, waſhed in Plantain-water, the yolk of an Egg, and Oyl of Roſes, and upon theſe Diapalma, and a Cataplaſm, which conſiſted of the crums of Houſhold Bread, Barley-Meal, Bean-Meal, Roſe-flowers, Betony-flowers, Oxymel Simple, and Oyl of Roſes, and bound it up with the band, termed by *Galen Cancer*.

On the twenty eight, four ounces of blood were taken away from the Median veine of the left Arm, his Dyet was Panado, and Barley-water, mixed with the juice of Pomegranates.

On the thirtieth, for the bitterneſs of his Mouth (of which almoſt all who are wounded on the Head do complain) he uſed this Syrrup.

Take of
Looſening Syrup of Roſes two ounces.
Lenitive Electuary one ounce.
Citron ſeeds half a dram.

The

The decoction of the Flowers and Fruits as much as is convenient.

Mix them. and make them into a Liquid Syrup.

Whereby he voyded five times bilious and Froathy matter. Upon the Fifth of *May*, the Patient ſlept quietly, and the Dura Mater about the Sagittal future was ſlimy, and almoſt putrified, and therefore I applied a Liniment, of Syrup of red Roſes, ſpirit of Wine, and Turpentine upon a piece of Silk, and dreſſed the Wound with the other remedies.

On the ſecond, his thirſt being great, he took the following Syrup.

Take of
Syrrup of the juice of Citrons one ounce.
Syrrup of the juice of Sorrel,
Syrrup of Pomegranates with Vinegar of each half an ounce.
Black Cherry-water,
Strawbery-water,
Borrage water of each two ounces.
Mix them together for a draught.

On the third, holding his breath, and ſtopping his Noſe a great quantity of yellow matter flowed out of the Wound; afterwards the Wound being cleanſed, a black piece of bone came in ſight near to the Lambdoidal Suture.

On the fourth, his thirſt was leſs, and I extracted the black piece of bone with the Pincers.

On the fifth, I waſhed the Wound with the Decoctum Divinum, by reaſon of the ſtinkingneſs of the bone.

On the ſixth, the ill ſmell abated, and for the better drying the Wound, I applyed this Digeſtive.

Take of
Turpentine waſhed in Scordium-water two drams.
Pouder of Myrrh,
Round Birth-wort,
Orris, of each a ſcruple.
Hony of Roſes ſtrained as much as ſufficeth to make it into the form of a Liniment.

On the ſeventh, the Patient was well, but his belly not being looſe enough, he made uſe of this Glyſter.

Take of
The common decoction eight ounces.

Fleſh.

Electuary of Diacatholicon one ounce.
Oyl of Violets.
Oyl of Camomile, of each an ounce and half.
Mix them together for a Glyſter.

From which he had three evacuations. On the eight, the Patient ſlept quietly. On the ninth, the Dura Mater was very red, out of, which while I wiped it with Cotton, there flowed ſome drops of blood; From the tenth to the fourteenth, he went on well. On the fifteenth, being bound, he ſwallowed *Bolus*'s of Lenitive Electuary one ounce, made up with Sugar, with which he had four ſtools. On the twentieth, red fleſh grew upon the Dura Mater, and between the two Tables of the Skull. On the twenty fourth, all things went well, and for the greater ſtrengthening of his Head I added Red Wine, and Wheat-Bran to the former Cataplaſme. On the thirtieth of *May*, a great ſcale of the Skull caſt off, and I applied to the Wound, now filled with ſolid fleſh, the Ceratum Divinum to cicatrize it. On the tenth of *June*, the skin covered the Wound. On the eleventh, the Patient went abroad. On the twentieth, being reſtored to his former health, he laudably exerciſed his Military imployment.

OBSERVATION VI.

Of another Wound on the Head with a very great going in of the Skull.

IN the Year 1636. On the eighteenth of *November*, at nine in the morning. A Country-man of *Idelhauſe*, of a hot and moiſt temperament about the thirty ſecond year of his Age: for I know not what conteſt had before a Judge concerning the limits of a Field, was ſtruck by a Smith with a Mattock, upon the right-ſide of the fore-part of his Head, ſo that he not only fell backward to the ground, and the blood guſhed out of his Noſe, but he lay there as a dead Man, without ſenſe or motion; at ten of the Clock the Wife of him that was wounded, fetched a Chyrurgion of *Ulme*, who bound up the Wound with *Galen's* Aſtringent Pouder, and the white of an Egg; when indeed conſidering the cauſe, which was ſo violent, he ſhould have dilated it croſs-wiſe. On the nineteenth, at four in the Afternoon, he was carryed to *Ulme* in a Litter, and about ſeven I found him, with a great pain of his Head, a Feaver, faintings, and a ſwelling

ling of the right eye; whereupon I preſcribed him a ſtrengthning Water, compoſed as followeth.

Take of
Black Cherry-water,
Sorrel-water,
Borage-water, of each an ounce and half.
The Anhalt Cephalick Spirit, two ſcruples.
Pearl prepared,
Red Coral prepared,
The Stone of Chryſol prepared.
Tablets of Pearl half an ounce.
Mix them

Of which he took a ſpoonful now and then, for thirſt and ſickneſs in his Stomach: in the evening he took half of this Julep.

Take of
The Syrup of the juice of Violets an ounce and half.
Tincture of Roſes with the Julep four ounces.
Endive water two ounces.
Pomegranate-water four ounces.
Mix it for two doſes.

On the twentieth day, two hours before noon, he complained of a very great pain of the Head; the bandage being taken off, and the Wound uncovered, and looked into, I diligently ſearched out the breadth and depth of the Wound, with the round end of the Probe, and found the Skull to be very much depreſſed.

Whereupon the ſame day I opened the Wound in the Figure of the Letter X or a Croſs with *Celſus* his Spatha, or Inciſion Knife ſharp on both ſides. *Tab.* XI. *Fig.* I. and the Membrane being ſeparated from the Skull with the Nails; for the ſtopping of the blood, and keeping the Wound open, I applyed a ſtupe of Hemp-hards moiſtned in the white of an Egg, beaten up, and ſprinkled with the Aſtringent Pouder; and for hindring the inflammation, I anointed the whole Head and Neck with Oyl of Roſes, and a Bolſter of Linnen four times doubled I bound to the Wound with the Rowler, *Tab.* XXXI. *Fig.* X. at Night he drank the cooling Syrup, and made uſe of Barly-water for his Drink, and Panado for his Supper.

On the 21. at ten of the Clock before noon, the bloud being ſtoped, I took off the Rowler, and removed what was to be removed; then looked into the Wound, and found not only a depreſſion in the bone of the Synciput, at the diſtance of a thums breadth from the Coronol

ronal Suture, and two thums breadth from the Sagittal; but alſo two branches of a Fiſſure made by the force of the blow. The former of which, reached from the depreſſion to the right eye, paſſing through the Coronal Suture; and the latter reached to the left ear. Things being ſo confuſed, I applyed the Pouder of round Birthwort and Orris to the bone; to the lips, a digeſtive Oyntment, and over it Diapalma: and for the great Tumour of the right eye, I ordered the following Cataplaſm.

Take of,
Barly-meal,
Bean-meal, of each ſix ounces.
The Crums of Houſhold-bread, two ounces and a half.
Pouder of Roſes,
Pouder of Betony, of each ſix drams.
Oyl of Roſes, three ounces.
Oxymel ſimple, as much as ſufficeth.
Mix them.

Two hours before dinner, he took Linitive Bolus's, made of an ounce of Linitive Electuary and white Sugar. On the 23. the inflammation being greater; as alſo the pain, giddineſs, and ſwelling of the right eye: I was forced to perforate the Skull with the Trepan, near to the Coronal and Sagittal Sutures; and being perforated, I made the rough parts of the hole ſmooth with the Lenticular Inſtrument; and putting under the Levatorie, I reduced the depreſſed bone, *Tab.* XXXII. *Fig.* II. I put a piece of Silk dipped in the Oyl of Roſes upon the Dura Mater, tied faſt to a ſtring; the reſt of the Wound I bound up with the Pouder and dry Lint, a Digeſtive, Diapalma, and the Cataplaſm; not neglecting to anoint the neck, and the parts neer the wound. In the evening the Patient was better than in the morning, before the Skull was perforated; and he made uſe of his cooling Syrup. On the 24. at ten in the morning, the Patient being better than he had been the foregoing days: for cooling him, and for revulſion, the Median Vein of the right Arm was opened, and four ounces of bloud taken away. On the 25. the pain being appeaſed, he took a Potion, to relieve him from being bound, which is very hurtful in Wounds of the head.

Take of,
Lenitive Electuary, one ounce.
Looſening Syrup of Roſes, two ounces.
Black-cherry Water, as much as ſufficeth.
Mix them, and make a Potion almoſt free from all heat.

The

The Wound, and right Eye pleaſed me well: the Patient took his cooling Syrup at night. On the 26. he ſaid that he had ſlept very quietly the whole night, and found no pain of his head or right Eye. On the 27. he reſted quietly again, and found no trouble from the Wound: ſome drops of a ſerous matter flowed out at the thicker Membrane of the Brain: for the better drying it up, I applyed a Liniment of Syrup of Roſes, Turpentine, and Spirit of Wine upon a peice of Silk, with the Cataplaſm; inſtead of Oxymel Simplex, I mingled rough Red-wine, the better to ſtrengthen the head. On the 28. the Patient was as well as the day before; but I perceived the Membrane of the Brain to be black on the outſide, by reaſon of the Contuſion. On the 29. being bound, he took his Laxative Potion, which gave him three ſtools: the Liniment had cauſed the Membrane to tend to Suppuration, and after the wiping away of the black ſpot with Cotton, a ſmall effuſion of bloud it appeared red. On the 30. he ſeemed to be very well; but complained of a beating pain about the forehead, and temporal Muſcle. On the 2. of *December* the pain ceaſed of it ſelf, and the Patient thought himſelf ſtrong enough to walk without a ſtaff. The purulent matter which flowed from the Dura Mater, through the hole made with the Trepan, was white, and well concocted. Inſtead of the Liniment and Digeſtive, I applyed to the fleſhy Membrane and lips of the Wound, Oyntment of Betony mixed with the yellow Cerate.

Take of,

The Juice of Betony, three ounces.
Burnet,
Woodbinde,
Great Comfry, of each half an ounce.
Malmſy, five ounces.

Boyl away the Wine, and then add,

Turpentine, two ounces.
Sheeps Suet,
Oyl of Roſes, of each one ounce.
Pouder of Maſtick,
Myrrhe,
Mummie, of each a dram and a half.
Virid. Æris, or Verdigreece, two drams.
Wax, as much as ſufficeth.

Mix them together, and make the Betony Oyntment.

On the third and fourth, the Patient continued well; and I drew

cut with the teeth of the Nippers, a little piece of the Dura Mater, which was ſeparated, and applyed the ſame remedies as in the foregoing days. On the 5. the Dura Mater was covered over with red fleſh, which *Celſus* accounteth a very good ſign, who in his eighth book writeth, *That when all goeth well, the fleſh beginneth to grow from the Membrane it ſelf.* On the 7. day, for the farther drying it, I applyed the Ceratum Divinum to the Dura Mater. On the 8. 9, and 10. the Patient continued well. On the 11. he ſlept not at all. On the 12. he complained of pain of his head. On the 13. he ſlept a little. On the 16. with my Brode ſomewhat bended, I came between the firſt and ſecond Table of the Skull; and ſeparating a part of the bone with the Lenticular Inſtrument, I drew it out with the Pincers: I took another bone skaled off from the forehead with the toothed Pincers. The 19, 20, 21, and 22. he continued well. On the 23. he complained of a pain on his forehead, with a heavineſs, for which he took the former Potion, which wrought five times: But drinking cold water plentifully after dinner, he complained of a pain in his ſtomach. On Chriſtmaſs day eating much fleſh meat, there came a new flood of humours upon the Wound; he was feaveriſh all over, and the fleſh appeared black in the Wound: therefore forbidding him fleſh-meat, I allowed him only Panado. I purg'd him gently, kept him to a ſlender diet, and took off the black excreſcence of fleſh with Burnt-Alum; and in the ſpace of five days he was better. In the Month of *January* I Cicatrized the Wound with the Ceratum Divinum, and reſtored him to his former health with the forementioned Remedies.

The Ceratum Divinum is this.

Take of,

Gumme Ammoniacum,
Galbanum,
Opopanax,
Bdellium,
The Pouder of Myrrhe,
Frankincenſe,
Maſtick,
Long Birthwort,
Verdigreece,
Calmey, prepared,
Lapis Hæmatites, of each an ounce.
Litharge of Gold,
Common Oyl, of each one pound.
Yellow Wax,

Turpen-

Turpentine, of each ſix ounces.
Mix them, and make them into a Cerate.

This Conglutinates Ulcers very ſpeedily, and hindreth the growing of any bad fleſh.

OBSERVATION VII.

Of a Contuſion of the head, cauſing Death an hundred days after, by omitting the uſe of the Trepan.

A Country fellow, very ſtrong, and who had never been ſick in his life; about forty years of age fighting with others at Fiſty-cuffs, ſuſtained a great number of violent blows upon his bare head: this was done on the 11*th* of *November*, 1630. he did not much regard this; and for ſome days went about his ordinary imployment, although he felt no ſmall pain. Upon the 18*th* day he began to be weaker, and to feel his pains more violent; the motion of the lower Jaw was ſo difficult that he could ſcarce open his mouth, or put in meat; and at length, without preſſing the Jaw down with his hand he could not at all. A Country Barber being ſent for, began to cure him with I cannot tell what Remedies; but all things growing worſe, an experienced Chyrurgion was called after four days: *viz.* upon the 22*d* of the ſame month, from one of the Neighbouring Towns. He applyed divers outward diſcuſſing Remedies, and did ſomewhat mitigate, but not remove the pains: which did more and more ſettle themſelves all over the head, and back-part of the neck, and grew ſo violent, that he could neither move his head, nor lift up his eyes; beſides theſe, giddineſs, want of ſleep, ſometimes raving, and the weakneſs of all parts did ſo afflict him, that he could ſcarce ſtand upon his feet, much leſs walk, and ſometimes not ſo much as lift up his hands to his head.

At laſt a Phyſitian was ſent for upon the 7*th* day of *December*; who ſeeing him taken out of his bed, placed in a chair, and looking ſo grimly, was not a little ſurpriſed, and feared that Convulſions, or other more dangerous Symptoms might preſently happen. In the farther ſearch and examination for the diſcovery of the Signs, and Symptoms of his Diſeaſe, he felt about his head, that he might know in what part it moſt pained him; and found a ſoftneſs on the upper, and backward part of his head, which gave way to his fingers, and an evident pit remained in his skin; and therefore judged that there was an

Effuſion, and gathering together of congealed putrid bloud under the Muſculous coat, which ought to be evacuated by laying open the skin, leaſt the bone of the Skull might be corrupted thereby, the Pericranium inflamed, the forementioned Symptoms increaſed, and Death it ſelf ſucceed.

This was performed by a Chyrurgion then preſent, and the skin cut croſs-wiſe with a Raſor, the Inciſion being made down to the Pericranium, black bloud congealed, and ſome water, flowed out. By this opening of the skin, the Symptoms were in ſome meaſure mitigated, and much of the pains of the head remitted. Concerning this, others, eſpecially (thoſe who had done him this injury) began to ſpeak ill, and as if the Inciſion had not been neceſſary, and that it had done the head much hurt: at which, the Phyſitian ſomewhat moved, who knew him to be in no ſmall danger, by the ſeverity of the Symptoms, ſuſpected alſo that there might be a Fiſſure of the Skull made by the blows, (for he could not be well aſſured whither they had not made uſe of Weapons, and Clubs, as well as their Fiſts.) or that the blood collected together under the skin, might infect the Skull; or that an inflamation riſing in the outward parts neer the Sagittal Suture, a part of the corrupted matter might not penetrate inward through the Suture; or whether ſome Veins in the Brain, or its Membranes were broken, from which the bloud iſſuing out and turned into corruption, might not ſtir up thoſe cruel Symptoms; and therefore he perſwaded them to ſeparate the Pericranium from the Skull, and alſo to Perforate the Skull if the Symptoms went not off: he deſired alſo, the Conference with another Phyſitian, one who was much experienced in Chyrurgery, who being ſent for, and examining all the circumſtances, did totally agree with him; and adviſed, for the greater caution, that the Pericranium ſhould be ſeparated, otherwiſe they could never premiſe to themſelves any ſecurity. Which he confirmed both by reaſon and experience: but to this, a third Phyſitian and a Chyrurgion, who were brought in by the contrary party, would not conſent, becauſe no greater Symptoms at that time, nor any manifeſt ſign of the Skull being hurt appeared, and from hence pronounced him free from all danger; and perſwaded them, that the Wound, which for ſome days had been kept open, ſhould be healed up again, and the others, that they not ſeem to be willing to add unneceſſary afflictions, conſented to it. The Wound was therefore healed up: but from that time the Patient began to be troubled with great pains all over the head, but chiefly in the inward part, where the Inciſion was made, day and night giddineſs and great weakneſs afflict him; he paſſeth the nights without ſleep, loaths his meat, ſuffereth a continual heat in his upper parts, while the lower ſhake and are cold. On the fifth of *February*,

January, he felt a great Defluxion through the left part of his head, as if warm water poured down; the humours slipping down by the throat, and running into the breast, where they caused so great a heaviness, that he thought presently to be choaked; but after a few hours they were diffused again. A Physitian being present, thought it at last necessary that the Wound should be opened and dilated, but another would not consent to it, but pronounced it to be free from all danger. But the Patient grew every day weaker, and wasting away daily, died.

Hence two questions arise. First, Whether the opening, and cutting of the Skin on the head, performed by the Chyrurgion, then present, were necessary. The second, Whether blows on the head be dangerous and mortal. To the first I answer, That not only the Incision in the skin of the Head, made by the Chyrurgion, but also the Dissection of the Pericranium, and the Perforation of the Skull by a Trepan, was extreamly necessary; by reason of the appearance of the ferging Symptoms, which did indicate some hurt under the Skull. To the second, That Contusions, with, or without a Fissure of the Skull, are never to be slighted: we see they are able to cause death after an hundred days; especially when the Skull being broke, it is not opened with the Trepan, to purge that matter which descends by degrees through the Fissure to the Brain, and Dura Mater. These Questions were proposed to me by the most eminent *D. D. Jacobus Eggoldus* of *Memmingen*, and the four following Observations will confirm my Answer: of which, the two former, as communicated to me, I here Insert.

OBSERVATION VIII.

Of a Contusion of the Brain, in the ninth week. Destructive on the sudden.

IN the year 1636. in the Month of *December*, I received an account from the faithful Relation of my Collegue, the most eminent *D. Johannes Georgius Gockelius*, Dr. of Physick, and Philosophy, and Physitian in Ordinary to the Republick of *Ulme*, by the occasion of our most grievous *German* War, (in which the floods of Generous bloud spilt on both sides, have been the occasion of the deserved Prayers, and Tears of the Devout.

A certain Souldier of the Emperour's, an *Austrian*, in those Excursions, and small Parties, in which they come to Hand-blows,

was ſtruck, by a *Swediſh* Horſe-man, two great blows, with a Battle-Axe, on the hinder part of his head; in ſuch ſort, that being overcome, and thrown down to the ground, he was taken Priſoner by the contrary Party; and the Sign being given for their retreat, he, with other of his Fellow-Souldiers, was brought in, half dead, unto the Hoſpital at *Ulme*.

All theſe being put into the hands of the Chyrurgions, and Phyſitians appointed by our Senate for the benefit of the ſick; among whom, *D. D. Goekelius* was one who was preſent, were ſo well looked after, and provided with neceſſary food, and with inward, and outward Remedies, that many of them returned home ſafe and well: but our Patient, of whom we are ſpeaking, being bruiſed (but without any bloody wound) without any Fiſſure, or any conſiderable depreſſion of the Skull; about nine weeks being paſt over, when he could both go and ſpeak very well; felt no longer any pain from the Contuſion; and for recreating himſelf, was often pleaſed in walking about; was thinking of returning into his own Country, and upon the firſt occcaſion had determined to go away with the Bark: taking his reſt in the night ſafe and and ſound, to all mens thinking, he died in his ſleep.

That the cauſe therefore of ſo unexſpected an accident might not altogether lie hid; my fore-mentioned Collegue humbly deſired the Governours of the Hoſpital of *Ulme*, that they would grant him power and liberty of looking more accurately into this matter, and of ſearching into the foundation and beginning of it, by having the Skull opened by the hands of the Chyrurgions; by conſidering the Membranes encompaſſing, and looking into the ſubſtance of the Brain it ſelf.

The Governours willingly granting it; he cauſed the Skin to be cut croſs-wiſe, and the Pericranium to be ſeparated from the Skull, according to the uſual manner, and the Skull to be ſawed round; then proceeding in his Diſſection, by diligent inſpection and conſideration of all parts, he could not find any Fiſſure in the Skull, nor the leaſt footſtep of any Depreſſion whatſoever; but in the ſubſtance of the brain, juſt under the blow, a large Putrefaction, like rotten Apples, of a fingers breadth, and reaching almoſt down to the formoſt Ventricles of the Brain, and ſome corruption of the Pia Mater: all other parts untouched.

Communicating our opinions in this caſe, we could no ways doubt of the external cauſe, and violent percuſſion, which brought both ſickneſs and death to this Souldier; but this threw in ſome doubts and ſcruples worthy of our Conſideration, and Admiration.

Firſt, Why the force of the blow did not hurt the neerer parts, rather than thoſe which were farther off, although many examples

ples of the like nature have been experimentally found true?

Secondly, How thoſe temperate and clear Animal Spirits can be ſo highly diſturbed, as to admit of, as it were in a moment, a total blaſting, and deſtruction of the Brain?

And Thirdly, Why that great Putrefaction in the Brain it ſelf, and communicated, to the Pia Mater, ſhould never cauſe any pain in the inward parts, or any way deprave the inward or outward ſenſes; but on a ſuddain, take away all ſenſe, and life it ſelf?

Let Chyrurgions therefore learn by this Obſervation, not to make ſlight of any blows on the head, although they find the parts containing the brain not hurt. Never to promiſe, in ſuch caſes, an undoubted Cure; nor to permit any irregular diet; but with cautiouſneſs, and prudent diffidence, ſo to treat their Patients, that they may be true Lights in our ſacred Art.

OBSERVATION IX.

Of a going in of the Skull with a pricking of the Dura Mater for want of Inſtruments, deſtroying the Patient.

THE foremention'd *D. D. Gockelius* declared to me, that in the Year 1633. on the 23*d* of *February*, being ſent for to *Bibrack*, where he was between hope and fear, by reaſon of the troubles of the War, that a Townſman was plunder'd in his own houſe, by the enemy invading him in hope of booty; and was ſtruck upon the top of the head with the Hilt of a Sword, without a bloody Wound; but ſo as the bone of the Skull was much depreſſed, like a deep hole, and did grate upon the Dura and Pia Mater; and cauſed a Feaver, with ſome diſtraction of his mind. This Phyſitian in Salary being ſent for, attempted to Mollifie the Feaver, and other Symptoms, by a Lenitive Potion, opening a Vein in the arm, and ſome alterations: and moreover, contrived all manner of ways to lift up the Depreſſion, and bring it to its natural ſtate with thoſe, with the ordinary Inſtruments which they had there, but all in vain; for want of the Trepan: which, by reaſon of the inſecurity of the ways, could not ſo ſoon be brought thither: ſo that this moſt innocent man the next morning departed this Life.

The defect of thoſe neceſſary Inſtruments, delineated and deſcribed before, and the adminiſtration of the due Manual operation omitted, took away all hopes. We may alſo take notice, That if the firſt day

he were wounded, the skin had been laid open in the form of a Croſs, and, the blood being ſtopped, the Skull had been perforated with a Trepan the ſame day, that the bone which pricked the Membranes of the Brain might have been taken out, the Patient probably had not dyed.

OBSERVATION X.

Of a Vertigo in a Sheep, proceeding from an abſceſs in the Brain.

IN the Year 1634. *December* the 24*th*. Being in the Shop of *Nicholas Kite*, he made mention of his Sheep, among which, one was troubled with a Vertigo, or Giddineſs, the *Germans* call it *Wirbling*: this Diſeaſe one who dealt in Sheep affirmed to be incident to the faireſt of the Flock; and that hereby their whole Brain would be turned into Water, and then they would fall down dead on a ſudden. The Chyrurgion therefore commanded that one of theſe Sheep which was weakned with this Giddineſs, and turning round, ſhould be killed, and ſent me the Head to my Houſe, that I might open it, and diligently ſearch into the reaſon of this Symptome.

Whereupon opening firſt the Skull, and looking into both the Membranes, the ſubſtance of the Brain, and the firſt and ſecond Ventricles, I found not one drop of any Water, and then ſearching into the third and fourth Ventricles, there was alſo no ſign of any Water, but the third was filled with a great quantity of Blood; afterwards I lifted up the Organs of ſmelling, with the bony handle of my Anatomical Knife, and on the left-ſide between the Brain and the Pia mater, I found an abſceſs, like the Bladder of a Fiſh, full of very clear Water, and near to the left-eye the ſubſtance of the Brain black; I wondred that the Brain it ſelf being affected in this Diſeaſe, the Sheep ſhould not labour under an Apoplexy, or a Palſy, rather than a Vertigo.

OBSER-

OBSERVATION XI.

Of a Contuſion of the Head, upon which hapned a Vertigo, and an Apoplexy.

IN the Year 1645. On the 25*th.* of *Januarv*, I diſſected the Head of one of my own Sheep, which dyed of the like Vertigo, and taking off the Skull, I examined the ſubſtance of the Brain with all its bruiſings; and preſently on the left-ſide, as it were of the backward part of the Head, under the Dura Mater, I found a Bag of the thickneſs of a Fiſhes Blader, filled with Water, and little Worms, ſuch as are bred in Cheeſe: for it began to putrifie at the bottom. This Coated Tumour being bigger than a Hens Egg, had ſo inſinuated it ſelf into the ſubſtance of the Brain, that it did ſomewhat preſs upon the third Ventricle. This Sheep, as the Shepheard reports, turned her ſelf round about towards the night all that day ſhe dyed. That which hapned to Sheep, may happen to Men, and women. I obſerved together with *John Buraus* Barber, and *George Riedlin* Chyrurgion, the ſame effect in the Brain of *Maria Schmarhmaennen*, who after a Contuſion of the forepart of the Head which I cured, for a whole year complained very much only of a giddineſs. And one time ſiting at Supper, ſhe was taken with a violent Apoplexy, and dyed ſuddenly. Her Parents deſired me that I would open the Skull, either for the taking away, or elſe for confirming the ſuſpition they had conceived, that one had poyſoned her. The Skull being opened, and the Brain looked into, I found a Tumour on the left-ſide, both as to its coat, and matter contained in it, not unlike the former deſcribed, of the bigneſs of an ordinary Hens Egg, and partly compreſſing the third Ventricle. I gave this anſwer to thoſe, who demanded what might be the cauſe of this Tumour contained in a coat, and perhaps no ill one, that the Brain being violently ſhaken in that part, had contracted a weakneſs, and the nouriſhment flowing toward it, was converted into that Matter, and not into the ſubſtance of the Brain; from whence again it was evident, that blows on the Head were very much to be looked after; there being ſcarce any of ſo perſpicacious a Wit and Judgement whatſoever, that the diſpoſition of the inward parts to corruption may not ſometimes eſcape his knowledge.

OBSER-

OBSERVATION XII.

Of a Wound of the Head, with an Inciſion of the Falx, Dura Mater, and Pia Mater.

IN the Year 1635. *Michael Schuelder*, a Souldier of *Ulme*, and belonging to the Præſident of *Elching*, was wounded with a Broad-Sword, by a Souldier of the Emperor's, on the top and back-part of his Head; the wound on the back-part of the Head was ſimple, but that on the top of the Head, not only with a Depreſſion and Fiſſure of the Skull; but alſo with injury to the Dura Mater, and Falx, which receiveth the branches of the Carotidal Artery, and Jugular Vein. Theſe two Wounds an unskilful Barber, dreſſed after his faſhion, and cured according to the firſt intention; but what becomes of it? the miſerable Patient from hence ſuffereth moſt fierce pains, accompanied with a Phrenſy, a Convulſion of all parts; and at length an Apoplexy. Things being thus, ſix weeks after he was hurt, I was ſent for by his Wife yet living, and found him perfectly in an Apoplexy: the cauſe of which depended upon the obſtruction of the Nerves, from a great quantity of Matter, which ought to have been purged through the Wound: and ſo great was the Maſs of black and ſtinking Matter, that forcing a paſſage through the Noſe, and Palat; the Apoplexy went off, and gave me certain Indication of the hutt and Fiſſure of the inward parts: feeling with my Finger upon the ſolid parts of the top of the Head, I found a great hole, evidently demonſtrating the depreſſion of the Skull; giving my Prognoſtick therefore, that the Patient was in a great deal of danger. I cauſed a Lenitive Glyſter to be given; and after that had done working, the Cephalick vein of the Arm to be opened. On the ſecond day I opened the skin, and the Pericranium in the form of a Croſs with an Inciſion Knife, *Tab.* XI. *Fig.* I. I applied aſtringent Medicines to the Wound dilated, which in performing operations of this nature, it is very neceſſary ſhould be wide enough. The third day the blood being well ſtopped, I perforated the Skull five times, with the Trepan of *Aquapendens*, about the circumference of the Depreſſion, and through every hole, I let down a piece of Linnen dipped in Oyl of Roſes, to the Dura Mater, I ſprinkled the Bone with the Pouder known to you, and covered the lips of the Wound with a Digeſtive, Diapalma, and Linnen, thrice doubled, dipped in rough Wine hot, and a convenient Rowler; on the fifth I cut down the

the ſpace between the holes, with the turning Saw, *Tab.* XXXII. *Fig.* I. This part of the Skull depreſſed, being now freed from the intire and ſound part: this being corrupted from within as farr as the middle between the two Tables, I took out with the Pincers: and, firſt, by putting under a preſerver of the Membrane, I broke of the edges, and rougher parts, with the Pincers, *Tab.* XXXII. *Fig.* III, IV, V. This done, with my Croſs dividing Inſtrument, *Tab.* II. *Fig.* X. I depreſſed the Brain gently, and a great quantity of purulent Matter came out that way. To the Dura Mater (whoſe Falx being cut tranſverſly, the blood continually iſſued out) and to the Pia Mater alſo, I applied a piece of Linnen anſwerable to the hole, dipped in the Oyntment of *Heir. Fabritius*, to the Bone the Pouder and dry Lint, to the lips the Digeſtive, and over it Diapalma, a Pultiſs, and the Rowler. In the evening the Patient was better: and the purulent matter ceaſed from diſcharging it ſelf down by the Noſe and Palate. On the ſixth I looked again upon the Membrane, and Falx, and found that the blood iſſued out, which by reaſon of the deep Scituation of the Veſſels could not be ſtopped: for Veſſels cut in ſunder do require the immediate contract of Aſtringent and conſolidating Medicines, and ſome compreſſion; both of which were impracticable in this part, for fear of a new Haimorrhagy, and Apoplexy; whereupon I declared to the Wife, and Kindred of the Patient, that the Wound without danger of his life could not be healed: for the Wound being totally cicatrized, and the matter which uſed to iſſue out, being turned into Quitter, it would again excite the ſame Symptoms, which would be the cauſe of his death. Giving this prædiction, I dreſſed the Bone, and the lips of the Wound, as I wont, and left open the Wound at the meeting of the Coronal, and Sagittal Sutures, like an Iſſue in the Head, through which the matter gently came forth; and the Patient went about his buſineſs for half a year together; but being overtaken with Wine, he neglected the Ulcer, & ſuffered it in the ſpace of 24 hours to be healed up: ſo that not one drop of the matter could come out, and the forementioned Symptoms, not immediately happening, both the Patient and his Wife, did not doubt but he was in moſt ſecure health. Till after three Months taken with thoſe Symptoms again, he dyed ſuddenly. After his death if I had opened his Skull with a Saw, without doubt I ſhould have found matter under the Skull: from this obſervation it doth plainly appear, that the perforation of the Skull may be performed often with great benefit, not only in the beginning, but alſo a long time after the hurt. It will be alſo evident by the following Obſervation, that bad Symptomes, ſometimes appear immediately, and ſometimes after a hundred days; which if the Skull had been opened in the beginning without all doubt never had happened to the Patient.

OBSER-

OBSERVATION XIII.

Of a Wound on the Head cured by the Trepan after twenty eight weeks.

IN the Year 1625. In the Month of *December*, a Kinſman of D. N. *Tiſhlers* General of the Horſe, received a Wound on his Head, at *Milan*; which a Chyrurgion, by reaſon there was no appearance of any great Symptoms, healed up in the ſpace of fourteen days. In the Year 1630. In the Month of *March* he came to *Ulme*, complaining of a great pain all over his Head, of a giddineſs, dimneſs in his Eyes, and a Palſy of the right Arm. Upon ſuſpition therefore of a Fiſſure of the Skull, I cut the skin, and Pericranium in the ſhape of a Triangle, above twenty eight weeks after he was firſt hurt: and on the twenty firſt of *March*, in the Houſe of *Nicholas Reutte*; I perforated the Skull twice, upon the ſide of a very narrow Fiſſure, and cut down the ſpace between the holes with my turning Saw: the matter being diſcharged which deſcended through the Fiſſure under the Skull, thoſe Symptoms ceaſed, and the Patient was thus in the ſpace of one Month moſt happily reſtored to his former health.

OBSERVATION XIV.

Of a Fiſſure, and Depreſſion of the inward Table of the Skull; the outward being ſound.

IN the year 1626. in the Month of *July*, I gave in an account in writing to the Sheriffs of *Ulme*, how that going to viſit *Bartholomew Sckaffer*, a Souldier of the Emperour's, who had been Wounded on the head by the Boors of *Altenſtadt*, and finding him dead, I diligently enquired into the cauſe of his death, which happened upon the 20*th* day, in the preſence of many who were there; and found it to be a Wound on the right ſide, about the Lambdoidal Suture, with a hurt, and going in of the ſecond Table of the Skull, the firſt being ſound, which had been healed up by Barbers: for ſeeing that in this hurt of the Skull, the matter which ſlipped down to the Brain, by a hidden chink, without the help of the operation

ration could not be diſcharged, and much leſs the Skull, which continually depreſſed the Brain, could be raiſed up again, without fit Inſtruments an Abſceſs bred under the Skull; which, firſt bringing him into a Fever, and Phrenſie, broke into the right Ventricle of the Brain, and filled it, and with ſudden Convulſions killed him: whoſe life, in the beginning of the hurt, by the Perforation, and Elevation of the Skull, (both which operations are performed daily in *Italy*, without any danger) might, without all doubt, have been preſerved.

And becauſe that in our Territory, not this man alone, but many others formerly have periſhed, either out of the neglect or ignorance of this manner of operation, the Senate of *Ulme* hath given order; That the Barbers, as much as poſſible, ſhould be informed how to behave themſelves in ſuch dangerous caſes, that Patients, for want of this help, may not be compelled to loſe their Lives.

OBSERVATION XV.

Of a Wound of the Head, Mortal upon drinking of Wine after the opening of the Skull.

IN the Year 1634. on the 19*th* of *May*, *Henry Hebich* was wounded on the Head, by Coopers, about the Coronal Suture, and Temporal Muſcle; which was dreſſed at the firſt by *Nicholas Reutte*, who called me the third day; out of whoſe Wound I preſently drew a piece of the Skull, being ſeparated on all ſides, with the Pincers. On the 4*th* day, by reaſon of the great Inflammation of the Wound, I applyed convenient Remedies till the 9*th*, at what time the Patient began to complain of a heavy, and pricking pain of his Head, a moſt certain ſign that there was purulent matter under the Skull, and that the Membranes of the Brain were pricked by the bone. On the 10*th* the Parents of the ſick man, ſent for the moſt excellent, and moſt eminent *D. Gregory Horſtius* to conſult with me, who adviſed to open the Skull with the Trepan, whereby the matter under the Skull might get out, and the Shiver of the Bone might be drawn away. On the firſt of *June*, I perforated the Skull in the preſence of *D. D. Horſtius*, and found the Membranes of the Brain inflamed. On the 3*d* day, after the opening of it, the matter not being ſufficiently evacuated, by reaſon of the great Inflammation of the Dura Mater; by the conſent, and in the preſence of *D. D. Gregory Horſtius*, and *Johannes*

Regu-

Regulus Vellinger, I opened another hole with the Trepan, and cut down the ſpace between both the holes with my turning Saw. After the ſecond Perforation, I took out a little bone ſeparated from the inward Table of the Skull, which did continually prick the Brain, and its Membranes: which being taken out, the pricking pain ceaſed for ſome days; till by drinking of a great quantity of Wine, an Abſceſs was generated in the ſubſtance of the Brain, which cauſed a Fever, with loſs of his Reaſon, and then Convulſions all over, and Death; for on the 20*th* of *June* he departed this Life.

OBSERVATION XVI.

Of a Contuſion of the head, cauſing Convulſions at the New of the Moon, three Months together.

Marcus Beck, the Son of *Daniel Beck*, in Year 1629. upon the 15*th* of *November*, fell upon his head, and preſently ſhewed the ſwelling to his Parents, on the right ſide of the fore part of his head neer to the Coronal and Sagittal Sutures, which cauſed pains of the head, and general Convulſions: being ſent for, I gave inward Remedies, whereby the Convulſions ceaſed, and almoſt diſſolved the Tumour by applying to it the Skin of a Lamb newly killed: yet notwithſtanding, about the New Moon, the Boy complained of a pain of the head, which was accompanied with the former Convulſions. After two Months the ſwelling of the head was every day bigger, and the ſame Symptoms infeſted the Boy about the New Moon, in the 3*d*, and 4*th* Months: being at length ſent for by the Parents, I looked upon the Tumour, and declared to the ſtanders by, that theſe Symptoms in my judgment were cauſed by a ſharp matter which did draw and corrode the Pericranium; neither was I deceived in my opinion, for making an Inciſion with my Knife, *Tab.* II. *Fig.* II. in the form of a Croſs, *Tab.* XXX. *Fig.* X. down to the Skull; and evacuating the matter, I layed open the Wound. The next day, the flux of bloud being ſtopped, I found the Skull rough, and black. On the 3*d*, ſcraping the Skull firſt, half way through, I applyed the Cephalick Pouder and drie Lint, till it was covered with very good fleſh; but the wound I dreſſed, firſt with Digeſtives, then Cleanſers, next Incarnatives, and laſtly Cicatrizers. By this means, the Boy being about ſeven years of age, was reſtored to his former health in twenty days after the Inciſion, and an hundred and twenty after he received the hurt, being yet alive, to ſhew the marks of the Inciſion.

OBSER-

OBSERVATION XVII.

Of a Wound on the head, with a Hewing, or Chopping away of the outward Table of the Skull.

IN the Year 1631. on the 4*th* of *November*, a Noble Senator of *Ulme*, was Wounded on the top, and back part of his head, with the loſs of the Skin, and plaining away of the Cranium, to the bigneſs of a Dollar, or Five-ſhilling piece of Silver. *Nicholas Reuſſe* filled up the Wound preſently with Aſtringents, and I cauſed ſix ounces of bloud to be taken from the Cephalick Vein, after the working of a Laxative Glyſter. On the 5*th*, the Wound being unbound, and the bone ſcraped away to the middle, I ſprinkled it with the Cephalick Pouder and put on Lint; I applyed a Digeſtive to the lips of the Wound, and over that Diapalma, and a Pultiſe to hinder any Inflammation. On the 3*d* day, by reaſon of a bitterneſs in his mouth, he took a Potion purging the Gall, and voided often that billous matter, which made his Mouth, Throat and Stomach bitter. On the 5*th* he was better. On the 8*th*, py reaſon of being bound, he complained much of a pain of the head, about the Wound; for which, I admitted of a Laxative Glyſter, which coming away, his pain alſo ceaſed. On the 9*th*, the Wound digeſted white and equal quitter; upon which, I mixed ſome things cleanſing with my Digeſtive. On the 12*th*, fleſh began to grow upon the Skull; whereupon I applyed an Incarnative Medicine, made of the Ceratum Divinum, and Oyntment of Betony, till the Skull, by the benefit of this and the Cephalick Pouder, was covered over with ſolid fleſh; and with theſe ordinary Remedies (yet which ſeldome fail a Chyrurgion, if after, generally he preſcribeth a good Rule of living, and be diligent that the Patient content himſelf with a ſlender Diet, and abſtain from Wine, and Venery, and keep himſelf looſe) I cured this Noble Perſon, yet living, and many others, without the Perforation of the Skull.

OBSERVATION XVIII.

Of a Thruſt into the Skull, penetrating both the Tables.

IN the Year 1631. on the 29*th* of *Auguſt*, a Souldier of the Emperours, Wounded *Jacob Wirth* of *Aiche*, on the top of the Head with a ſharp Inſtrument; which, a Barber of that place bound up, and healed in a weeks time. On the 18*th* day after it was healed, the Patient complained of a great ſwelling, and pain on the head, in the ſame place. On the 9*th*, he was brought to *Ulme*. On the 10*th*, I opened the Skin, and Pericranium, with the Inciſion-knife, *Tab.* II. *Fig.* I. in the ſhape of the Letter X. and made the Skull bare. On the 11*th* I diſcovered where the Thruſt had been made into the Skull; which, I tryed to take away with the Piercer, *Tab.* XXXIII. *Fig.* I. but finding the Thruſt to reach the lower Table, and ſuſpecting that it penetrated that alſo; on the 12*th*, letting alone the Piercer, I perforated the Skull with the Trepan, and made way for the matter deſcended under the Membrane. The matter being evacuated, I put a piece of Linnen dipped in Oyl of Roſes upon the Membrane; to the bone, the Cephalick Pouder, and to the lips, a Digeſtive, and over that, Diapalma, the ordinary Cataplaſm, and the Band called Cancer. On the 13*th* the pain remitted. On the 14*th* the Inflammation declined. On the the 30*th* the Skull throwed off a Skale. And on the 40*th* the Wound was Cicatrized.

OBSERVATION XIX.

Of a Wound on the Head, with two Fungus's, Mortal.

Conrade Schieffelen of *Ulme*, one of the Emperours Souldiers, about twenty ſeven years of age, of a hot and drie Temperament, in a moſt cruel and bloudy Conflict, neer to *Wittinweir*, on the 9*th* of *Auguſt*, 1638. was wounded with a broad Sword on the hinder part of his head, with dammage to the bone. An Empirick dreſſed this Wound at firſt as if it had been a ſingle one. On the 24*th* of *December* the Patient come to *Ulme*, and fell again into the hand of ſome unskilful Barber; who bound up the Wound as the former till the 31*ſt* of *January*, 1639. at which time the Patient was received into the Hoſpital,

Hoſpital, where this Barber ſearched the Wound, partly healed up, and partly covered with an excreſcence of fleſh, with a ſlender Probe, which he thruſt the third part of its length ſtreight on, not only through the Fiſſure of the Skull, and both the Membranes; but alſo (alas how erroniouſly) into the ſubſtance of the Brain it ſelf: out of which a quantity of matter flowed. On the 1. and 2*d*. of *February* his body being prepared and purged, the Patient complained of the heavineſs of his eyes. On the 3*d* this imprudent Barber, by the order of the Patient, called me to conſult with my moſt eminent Colleague, *D. D. Moyſes Heldius*, and that moſt experienced Chyrurgion, *George Reidlin*; looking upon the Wound, and conſidering the Circumſtances, we ſuſpected ſome hidden miſchief from the firſt putting in of the Probe ſo deep: whereupon I preſently cut the Skin in the ſhape of a Triangle, with an Inciſion-Knife, *Tab.* XXX. *Fig.* XI. and bound up the Dilated Wound with Aſtringents. On the 4*th* day, the bloud being ſtopped, looking into the Wound, we found a great broad Fiſſure of the Skull with two Fungi's. Things being thus, I applyed to the Skull, the Cephalick Pouder and drie Lint; to the lips, a Digeſtive, and over that Diapalma, and the Cataplaſm of *Hippocrates*, hindering Inflammation, and a Rouler divided into four parts, *Tab.* XXXI. *Fig.* IX, X. On the 6*th*, the Patient complained of Giddineſs of the head, and pain of the right eye. On the 7*th* he was ſomewhat better, and took *Bolus's* made out of ſix drams of Lenitive Electuary, two drams of the Electuary of the juice of Roſes, and Sugar; whereby he voided bilious matter four times. On the 8*th*, the Patient complained again of pain of the right eye, and I applyed to him the Fungus, the Ægyptiacum Oyntment of *Hildanus*, mixed with Pouder of burnt Alum, which notwithſtanding, did not eat down the Fungi; but ſo cleared them, that I could put my blunt Probe, *Tab.* VIII. *Fig.* VI. between them: and ſeeing that the Fiſſure was ſo long and broad, and that ſo many Errours had been committed by the Barber, I would not come to the Trepan, or Perforation of the Skull, that I might not put an Infamy upon that eminent Operation, which hath been helpful to many, for by their Relation it was evident, that not only both the Membranes of the Brain were hurt, but the Brain it ſelf alſo ſuffered. On the 9*th* day, for pain of the head, the Median Vein of the right Arm was opened, and four ounces of bloud taken away; in the evening he was better. On the 14*th* he ſlept little by reaſon the Stove was cold, for Wounds on the head require a moderate heat, and coldneſs of the air is an enemy to them. On the 15*th*, the lips of the Wound newly made, appeared red without pain, but the Fungi larger: for the drying up the Fungi, I uſed the Decoctum Divinum.

Take of

Malmſey, a Pint and a half.
Red Roſes, a pugil and a half.
Betony,
Woodbind,
Burnet,
Centaury,
Arabian Stechas, of each two pugils.
The Roots of long Birthwort,
Orris,
The Bark of Frankincenſe-tree, of each two drams.

Boyl all theſe to the Conſumption of the third part, only give the Roſes but one boyl, and ſtrain them: add to what is ſtrained out, two ounces of Hony of Roſes well skummed.

But this produced no effect here, although in many others it hath been a preſent Remedy: whereupon I cut off a piece of the upper part of the greater Fungus with my Raſour. On the 16*th*, the Patient ſeemed well, and complained of his ſlender Diet. On the 17*th* he complaintd of a numneſs all over his right ſide, and both the Fungus's appeared bigger than the days before. On the 18*th* the Patient not being content with what Means I preſcribed, his Sitter made ready for him a mixed diſh of Apples, and other things, which he vomited up again as ſoon as they were down, and was very ill after it. On the 19*th*, a great quantity of purulent matter flowed out between the Fungi, and the Skull inclined towards yellowneſs, the lips of the Wound falling away. On the 20*th*, all the right ſide was taken with a Palſie, the Patient ſlept all night and complained of nothing. On the 21*ſt*, both the Fungi appeared white, and the Skull black and blew. On the 22*d*, the Patient loſt his Speech, began to be Apoplectical, and his right arm was moved about by Convulſive motions. The 23*d* at nine of the Clock in the forenoon the Patient died. On the 24*th* I looked upon the Wound, and the Fungi were fallen ſo flat, that I coold eaſily put my Ring-finger into the Fiſſure. I opened the Skull with a Saw; the inward Superficies of the Bone was ſo corrupted, that the whole bone of the back part of the Head as far as the Lambdoidal Suture was thinner than the *Os Petroſum*. It is alſo to be noted, that when there is no depreſſion of the Skull, which may prick the coverings of the Brain, and thereby cauſe great pain, it is not neceſſary to cauſe the Patient to crack Nuts, or the ſtones of any Fruit, to find out whether there be any Fractare of the Skull: for this Perſon cracked Nuts, Philberds, Wallnuts, Cherry-ſtones, Peach ſtones; went about his military employment, and com-

complained not of pain of his head. Afterwards putting my Probe between the Fungus's, I found a great Abſceſs contained in its proper Coat, which lay hid on the left ſide of the Brain: then taking away the Membranes of the Brain, I ſhewed the Brain it ſelf with the Abſceſs in its bag; I liſted up the Proceſs of the Dura Mater, which is called the Falx, that the ſpace between the right and left ſide of the Brain, with its Veſſels, and turning winding figure might come in ſight. The Brain being cut croſs, and a great part of it being taken away without hurting the left Ventricle, the Abſceſs appeared; out of which there flowed ſtinking purulent matter in great quantity: the Abſceſs being cleanſed with Cotton, there appeared about it a thick Membrane which contained this matter: for in the parts about it there appeared no ſign of Inflammation or Corruption. Afterwards I ſhewed the left Ventricle ſomewhat preſſed down, and the right not depreſſed, but full of clear water: on the left ſide the Plexus Choroides appeared pale, but on the right ſide very red.

From hence we have the cauſe of the Palſie on the right ſide, of the Giddineſs, of the pain of the right Eye, and of the Convulſion the day before: and therefore where the Skull is hurt or fractured, and a Fungous fleſh growing underneath, appeareth above the Skull and Fleſh; it is a certain ſign that the ſubſtance of the Brain, or at leaſt Membranes of the Brain are bruiſed and turn.

OBSERVATION X.

Of a Wound on the Eye, made by thruſting in the end of a Spindle.

IN the Year 1644. on the 21*ſt* of *March*, *Roſina Pfeifferin*, a Souldiers Daughter, of four years of age, fell upon the point of a Spindle, which hurt not only the Eye-lid, but being thruſt into the Orbite, was broken, and left there, ſo that ſhe could not ſee in the leaſt. A Barber bound up this, and healed it as a ſimple Wound: whereupon the Eye became greater every day, and drew to the inward Membrane of the Eye-lid. Things being thus, I drew the Eye-lid back a little with my Fingers, and ſeparated the Eye-lid from the Eye with the Probe, *Tab.* XXXIII. *Fig* II. which being done, I applyed a Cataplaſm warm to the Eye, made of the White of an Egg, an Apple, and this following Water.

Take of
Plantain Water,
Roſe Water, of each an ounce.
Tuty prepared, one dram.
The Stone Chryſol. prepared, one ſcruple.
Crude Alum, half a ſcruple.
Mix them.

And bound up the Eye with *Galen*'s Bandage. On the 22*d* ſhe took of Laxative Diacydorium, two drams and a half, which gave her five ſtools: I ordered a Bliſtering Plaſter to be applyed to the Neck: from the uſe of theſe Medicines, the pain and ſwelling of the Inflammation remitted. On the 23*d*, and 24*th* ſhe was better. On the 25*th* ſhe complained of a great pain of her eye: upon which, I unbound the Eye, and with my fingers drawing the Eye-lid from the Eye, I pulled out the end of the Spindle with the Pincers: which being drawn out, all pain preſantly ceaſed. And theſe are the Remedies with which I moſt happily reſtored the Souldiers Daughter to her former health.

OBSERVATION XXI.

Of a Convulſion of the Eye from a Concuſſion of the Brain.

IN the Year 1639. on the fifth of *September*, at one of the Clock in the Afternoon, *George Mercklen*, a Souldier of *Ulme*, was ſo hurt on the right eye, with a blow of Radiſh, weighing a pound, thrown at him by his Fellow-Souldier; that he preſently fell to the ground, and lay for dead: in which caſe he was brought into the Hoſpital, and theſe following things were adminiſtred. Firſt, I lifted up his Eye-lids, and found both his Eyes Convulſed upwards; and the 58*th* Aphoriſm of *Hippocrates*, in the *7th Section*, coming into my mind; which is, that *he whoſoever hath his Brain, upon any occaſion, violently ſhaken, he muſt neceſſarily become Dumb*: which alſo happened ſo in our Patient; for revulſion ſake I preſcribed this following Gliſter.

Take of
Looſening Hony of Roſes, two ounces.
Hony of Roſemary Flowers, one ounce.

The

The Electuary of the Juice of Roſes, half an ounce.
Diacatholicon, ſix Drams.
The Carminative Decoction, nine ounces.
Mix them.

After the coming away of the Gliſter, the Median Vein of each Arm was opened, and eight ounces of bloud taken away: in the mean time he often made uſe of the comforting Water, mixed with the Anhalt Cephalick Spirit. On the *6th* of *September*, which was the *2d* day of his being hurt, general Convulſions ſucceeded his Apoplexy, laſting all the night; the Patients Pulſe was equal; the Gliſter made uſe of again, and the Cephalick Spirit diligently given.

The Gliſter coming away, he was better; the Convulſions of his Eyes ceaſed, and they returned to their natural ſtate: and what is more, he was able both to ſee and hear me, and the ſtanders by, but could not ſpeak; without doubt by reaſon of the compreſſion, and obſtruction of the recurrent Nerves. On the *3d*, he ſlept well all night, and complained of nothing but a compreſſion of his Wind-pipe; whereupon he took this following purging Potion.

Take of,
Looſening Syrup of Roſes,
Choice Manna, of each ſix drams.
Extract of Rubarb, one dram.
Diacarthamum, half a dram.
Speedwel, and Burnet Water, of each as much as ſufficeth, to make it into a thin Syrup.

After the working of which, at times, he uſed this following Lambitive.

Take of
Syrup of Violets,
Oxymel Simple, of each an ounce.
Flowers of Benzoin, half a ſcruple.
Speedwel Water, two drams.
Mix them.

On the *4th* the Patient was better than the day before, and made ſigns that he would eat an Egg. On the *5th*, he went on well, and by the ſame way deſired to drink Hony and Water; but his Speech not returning, he took this Potion, an hour before Dinner.

Take of

Syrup of Roses, two ounces.
Diacatholicon, six drams.
Electuary of the Juice of Roses, three drams.
The Decoction of the Flowers and Fruits, as much as is sufficient.

Mix them.

Four hours after he took this, he spake very plain. On the *7th*, he was excellently well; and being restored to his former health without any outward application, he went abroad.

OBSERVATION XXII.

Of a Wound and Fracture of the Nose.

IN the Year 1644. on the of 22*d*, *April* the most Worthy *D. Wolfgang* of *Bartenheim*, living in the City of *Ulme*, upon going to [illegible] Estate of his in the Countrey, fell from his Horse, the Horse striking him upon the Nose with his heel in such manner, that he so broke and mangled it, that the lips of the Wound, by reason of the great flux of blood, and coldness of the part, could scarce be brought together. That night *John Reidlin*, a Chyrnrgion, stopped [illegible] with Astringent Medicines. On the 23*d*, being called in, [illegible] the Nose depressed, and very much rent; and therefore [illegible] with a broad Probe, sometimes with a round, I reduced [illegible] and bones of the Nose, and put in a little Tube of [illegible] the Nostrils, dipped in Diapalma, and the Liniment [illegible], that the Bridge, and Bones of the Nose, now reduced, might [illegible] in their place. I brought the lips of the Wound to touch one another without sewing; and kept them together with long pieces of Linnen, applyed cross-wise, dipped in this following.

The White of an Egg, well stirred up together.
Pouder of Tuty prepared, a dram and a half.
The Stone Chrys. prepared, half a scruple.
Plantain water, half a dram.

Mix them.

I bound up the part with *Galen*'s Band for the Noſe, by reaſon of a violent pain of his head, I applyed to his Fore-head and Temples, Hemp-hards, dipped in this liquid Medicine.

Take two Whites of Eggs.
Half an ounce of Roſe-Vinegar.
Four ounces of Roſe-water.
Two ounces of Oyl of Roſes.
Mix them.

I Anointed his Neck with Aſtringent Oyls, and applyed to it long pieces of Linnen dipped in rough Wine, to hinder the Humours flowing to the head, for his faintings, I preſcribed this Cordial.

Take of
Black-Cherry water,
Burnet Water,
Strawberry Water,
Roſe Water, of each an ounce.
Prepared Pearl, half a dram.
Magiſtery of Red Coral, a ſcruple.
Pouder of Chryſol. prepared, half a ſcruple.
Pearl Tablets, half an ounce.
Mix them, for a Cordial Water.

Took often of this at times. At nine of the Clock in the Forenoon, he made uſe of this cooling ſolutive Gliſter, to keep the humours from flowing to the head.

Take of
The Leaves of Mallows,
Burnet,
Violets,
Borage,
Water-Lillies,
Flowers of Camomile, of each half a handful.
The Seeds of Flax,
Melons,
Fennel,
Citrons, of each a dram.
Boil them in a convenient quantity of Water, and to eight ounces of it ſtrained out, add to it Hony of Roſes ſolutive, four ounces.
Oyl of Violets, two ounces.

Oyle of Camomile, one ounce.
Mix them, for a Glister.

With which, he voided twice, very thick and parched matter. At ten of the Clock, the Chyrurgion opened the Median Vein of the right Arm, and took away five ounces of bloud, which appeared full of Gall, and half corrupted. In the evening, to extinguish his intolerable thirst, he took a draught of the Mineral Waters of Uberkingen, mixed with Pomegranate Wine. I ordered him a slender Diet; for his Meat, Boyled Barly or Panado, or sometimes Flesh-Broath, with the yolk of an Egg dissolved in it; for his Drink, Decoction of burnt Hartshorne mixed with Pomegranate Wine. On the 24*th* of *April*, he was stronger, and the pain of his head was less than the day before. I dressed the Wound with Plaisters: and for want of his sleep, and heeat all over, I prescribed this following Decoction, to wash his Feet, and an Emulsion.

Take of
The Leaves of Betony,
Lettice,
Violets,
The Flowers of Lillies,
Poppies,
Roses, of each a handful.
Mix them for a Decoction for the Feet.

Take of
The Seeds of Melons, an ounce and a half.
Of White Poppies, half an ounce.
Water-Lilly Water,
Strawberry Water,
Black-Cherry Water,
And Sorrel Water, of each four ounces.
Make an Emulsion, to which add,
Magistery of Red Coral, half a dram.
Prepared Pearl, two Scruples.
Syrup of Violets, two ounces.
Mix them, for three Doses, taking one after Supper, and after washing his Feet.

On the 25*th* the Patient being asked, answered, that he had slept a little, and complained of a great heat, and redness of his right Eye: which, after divers Glisters, this following Cataplasm presently helped.

Take

Take

Two ſweet Apples, boyled in Milk, and ſtrained.
The White of an Egg ſhaked up.
Pouder of Prepared Tuty, a dram and a half.
A little Roſe Water.

Mix them into a Cataplaſm, excellent againſt Rheums and Inflammation of the Eyes.

From the 26*th* to the 30*th* of *April*, I put up little Tubes into the Noſe, covered over with Oyntment of Tuty, and hindred the excreſcence of the fleſh with this Pouder.

Take of

Pouder of burned Alum, half a ſcruple.
Prepared Tuty, two ſcruples.

Mix them.

Outward I applyed the Ceratum Divinum, and with theſe Medicines I conſolidated the Wound within and without the Noſe: after the healing of the Wound, the Patient himſelf put in the Tubes, dipped only in Tuty Oyntment, and bound up with the part with *Galen*'s Band, till the broken, and depreſſed Bones were united again with a Callous. With the ſame outward Remedies I cured Mr. *Chriſtopher Schleſcher*, and *Melchior Friet*; who, beſides a Wound on the Head and Noſe, was ſo Wounded on the Breaſt, as to hurt the Stomach, and Midriff: of which, afterward, there is a particular Obſervation.

OBSERVATION XXXIII.

Of a Swelling, with a Bag cut out of the upper Jaw.

IN the Year, 1631, *Roſina Stenglerin*, of *Gieglingen*, of a Melancholy Temperament, declared to me, that four years before ſhe had a Caruncle, or little piece of fleſh growing upon the left ſide of her mouth, about the Eye-teeth of the upper Jaw; being of a red colour, hanging down, and of the bigneſs of a Nutmeg; which in the ſeventh Month, a Barber of that place took out without any preparation of the Body, or Application to the Part. After a few Months it grew again; being hard, red, full of Veins, and very painful; and ſo continued till the fourth year, at which time it was of the bigneſs of a Gooſe Egg, and ſtuck not only to the Jaw, and to the Eye-

Eye-teeth; but to the Canini, or Doggs teeth; and to the Roof of her Mouth; ſo as it hindred her in Swallowing, and Speaking: and therefore ſhe deſired me preſently to cut it out. This Tumour was ſomewhat exulcerated about the Eye-teeth; not from its Malignity, but from the ſharpneſs of the Vinegar with which ſhe often waſhed her mouth when it ſmelled ill: And ſeeing that this Tumour could no otherwiſe be taken away, but by Manual Operation; for the preparing of her body, on the 4*th* of *October*, I preſcribed this:

Take of
Mead with Tartar two ounces.
Borage Water, four ounces.
Saxon Cordial, two Drams.
Mix them for one Doſe.

This ſhe made uſe of three days, twice in a day before Dinner, and after Supper. On the 8*th*, five hours before Dinner, ſhe took theſe Pills.

Take of
The Maſs of the Golden Pills,
Sine Quibus,
Extract of Pill. Cochiæ, of each a ſcruple.
Magiſtery of black Mecoachan, ſeven grains.
Make them into ſmall Pills, with the Syrup of Betony: and let them be gilded.

Theſe brought away at ten Stools, much ſerous, bilious, and burnt matter. On the 10*th*, that we might ſee what bloud ſhe had, the Median Vein of the right Arm was opened, and four ounces taken away, which war ſerous and burnt: I then ordered a Bag with theſe Ingredients.

Take of
The roots of Fennel, two drams,
Polypody half an ounce,
The toppes of Roman wormwood. one Pugil.
The leaves of Betoney,
Speedwell,
Agrimony, of each half a pugil.
The leaves of Borage, one pugil.
Leaves of Senna without the ſtalks, an ounce and half,
The roots of black Mechoacan, two drams.
The beſt Rubarb, three drams.

Her-

Hermodactyls,
Turbith, of each a dram and a half.
Seeds of Carthamum, the husk taken off, ſix drams.
Anis Seeds,
Fennel ſeeds, of each half a dram.
Crem of Tartar, three drams.
Ginger,
Cinamon, of each a ſcruple.

Theſe being cut and bruiſed, put them into a Bag and infuſe them into a meaſure of Neckar Wine.

Of this, every other day, two hours before Dinner, ſhe took four ounces. By uſing this Purging Wine, her frequent ſpitting abated; which led us to the inſpection of her bloud and purgation: in the mean time the Patient did not neglect to keep a good Diet; and inſtead of Wine, drank a Decoction of Sarſaparilla. On the 20, and 21*ſt*, in the Morning, Afternoon, and after Supper ſhe took as much as would lie upon a knives point, of this following Mixture.

Take of
Conſerve of Borage,
Conſerve of Roſes, of each an ounce.
Preſerved Citron Pill, two drams.
Preſerved Nutmeg, one dram.
Magiſtery of red Coral,
Pearl, of each a ſcruple.
Lapis Hæmatitis, half a ſcruple.
Syrup of the Juice of Citrons, as much as ſufficeth.
Mix them.

On the 23*d*, the Patient being better upon the uſe of this; for the preſerving her ſtrength, ſhe often took a ſpoonful or two, of this comfortable Water.

Take of
Black Cherry Water,
Borage Water,
Roſe Water, of each an ounce.
The Anhalt Cephalick Spirit, one dram.
Prepared Pearl,
Magiſtery of Coral,
Lapis Hæmatitis,
Chryſolit prepared, of each a ſcruple.
Pearl Tablets, half an ounce.
Mix them, and put them into a glaſs.

And

And that nothing might be wanting, I preſcribed this ſweet ſmelling Water.

Take of
Fuchſius his odoriferous Water,
Roſe Water, of each an ounce.
Roſe Vinegar, ſix drams.
Mix them.

After this Preparation, her mouth being opened, and her head held faſt by the ſtanders by; I ſeparated the Tumour, before and behind, and beyond the Eye-teeth; and cutting it off in the middle with the Pincers, *Tab.* XI. *Fig.* V. I drew it out. After the extraction of the Tumour, for the ſtopping of the bloud, the Patient often waſhed her mouth with this following Mixture.

Take of
Plantain Water,
Self-heal Water,
Roſe Water, of each three ounces.
Roſe Vinegar, an ounce.
Mix theſe, and waſh the Mouth with them.

But ſeeing that after often waſhing of the Mouth the bloud ſtopped not, I touched the Veins and Arteries with a red hot Iron Inſtrument, *Tab.* XIX. and applyed burnt Spunge, and the Aſtringent Pouder of *Galen*, and a piece of Linnen dipped in Whites of Eggs, and Red Wine, and preſſed out. I bound up the Jaw on the out ſide, with Linnen four times doubled, and a Rowler with two heads. In the Evening the Patient was better, and the bloud being ſtopped, a great quantity of ſerous matter flowed out of the mouth. On the 24*th*, the Patient complained of a great pain of her head; but the Medicines were left in her Mouth, for fear of a new Flux of bloud. On the 25*th*, the bloud being altogether ſtopped, I took out the burnt Spunge, and Linnen, and preſcribed thir following Gargariſm.

Take of
Plantain Water,
Self-heal Water,
Speedwel Water,
Roſe Water,
Cinquefoyl Water, of each three ounces,
Hony of Roſes ſtrained, two ounces.
Tincture of Roſes, an ounce and a half.
Mix them.

The

The mouth being washed, I applyed to the Ulcer, Lint dipped in the White of an Egg, and an Oyntment made up with the Astringent Pouder of *Galen*, and bound up the Jaw outwardly with a Boulster and Rowler.

In the Evening, by reason of her being bound, she admitted of this Laxative Glister.

Take of
The Carminative Decoction, eight ounces.
Hony of Roses solutive, two ounces and a half.
Diacatholicon, an ounce.
Oyl of Camomile, an ounce and a half.
Oyl of sweet Almonds, an ounce.
Mix them for a Glister. Which gave her six stools.

On the 26*th*, she said she slept very quietly all the night, without pain of her jaws. On the 27*th*, the Medicines being taken out which I applyed two days before, there appeared a little slimy part about the Palate, and Eye-teeth; which I touched with a Probe, wound about with Wool, moistned with Spirit of Vitriol; and ordered the Mouth to be washed with the ordinary Gargarism. On the 28*th*, the dressing being again taken out, all was very fair about the Palate, and Eye-teeth. On the 29*th*, the Eschar which the Fire made, being taken off, she washed her mouth often in a day with this.

Take of
Hony of Roses strained,
Tincture of Roses, of each an ounce and a half.
Mix them,

On the 30*th*, by reason of a pain of her head, she made use again of the Cephalick Pills; upon which, all pain ceased. On the 31*st*, I Cicatrized the Ulcer, and the Patient began to speak without any Hesitation. On the *first* of *December* she was well, but for the farther drying up the part, she drank a Decoction of Sarsa. On the 22*d*, I looked in, and found almost all parts of her mouth skinned; and to prevent any relapse, I advised her to make use again of the purging Wine. On the 3*d*, the Ulcers being totally healed, the Patient went abroad very joyfully.

OBSER-

OBSERVATION XXIV.

Of an Excreſcence of Fleſh on the Roof of the Mouth.

IN the fore part of the Roof of the Mouth, behind the fore-teeth, there is a remarkable cavity, through which, a Vein, and Artery, together with the skin of the Roof of the mouth, paſs into the cavity of the Noſe; out of this hole for three months there had grown an excreſcence of fleſh, like a Fungus, in the mouth of a Noble Matron, Wife to *D. Albert Sleichers*; out of which, a great quantity of bloud flowed, as often as ſhe did but gently touch it with her tongue: at length this Fungus, or Excreſcence of fleſh grew to the bigneſs of a Walnut, ſo as it hindered her ſpeech; and ſhe made uſe of a Barber, who applyed ſome Medicines but in vain. Being ſent for, upon the 10*th* of *March*, in the Year 1641. I looked upon the part affected, and touching the bottom of the Excreſcence with a Probe, the bloud preſently flowed out: conſidering this, it was manifeſt that the original of this evil, came through the forementioned hole; and therefore ſhe ſometimes made uſe of *Aquapendens* his Pills, which purged her head very well, and kept a good Dyet. I touched the Excreſcence with rectified Spirit of Vitriol, Juice of Purſlain, and Tincture of Roſes mixed together, and diminiſhed it; and at length extracted the reſt with an Inſtrument which I uſe to draw out a Polipus. So in the ſpace of ten days, ſhe was reſtored to health, to the admiration of all. For two years before this began, ſhe was troubled with deafneſs, and pain of her ear; but ſince the effuſion of bloud, ſhe heareth without pain, ſo, as I conjecture, the Diſeaſe was cured by Mutation, or Tranſpoſition.

OBSERVATION XXV.

Of a callous Hollowneſs, and Corruption of the Palate bone.

THe moſt Noble and Reverend Dean, *D. à Croneburg*, in the Year 1626. complained of a Periodical pain of the teeth, and a troubleſome hollowneſs in the roof of his mouth; and by that eminent Phyſitian of *Ausburg*, *Johannes Wolfgangus Beer*, deſired my adviſe and help: and this Diſeaſe taking its original from the ſuppreſſi-

n of the Hæmorrhoides; I adviſed that the moſt Reverend Patient would be pleaſed, after a ſufficient quantity of bloud taken out of the Baſilica of the left Arm, to purge away the ſuperfluous, and excrementious humours, with a purging Wine; to open the Hæmorrhoides with Leeches, and to make an Iſſue in the left thigh: whereby thoſe humours which aſcended to the head, and part affected, encreaſing the pain of the teeth, might be evacuated by revulſion, and diſcharged by the Iſſue; for preventing the force of the pain, I propoſed the operation in the Anthelix; which the forementioned Phyſician did moſt dexterouſly perform with my Iron Inſtrument, red hot: this being done, we took care to draw out the rotten tooth, whereby the injections of the Decoctum Divinum, uſed in the cure of rotten bones, might paſs through the Cavity which the tooth left, and reach the fiſtulous hollowneſs in the roof of the mouth; but ſeeing the Cavity about the tooth, and the callous hollowneſs of the Palate did not cloſe, nor was there hopes that the Patient ſhould be cured without the help of fire; I asked him if he would trie the efficacy of this only Remedy left, which we might do with great hopes of recovery: and he admitting of it, I ſent the Inſtrument deſcribed, *Tab. I. Fig.* IV. to *Ausburg*, to *D. Beer*, with which, being made red hot, he cut down the rottenneſs of the Palate, to the hollowneſs of the tooth, without the loſs of the leaſt drop of bloud; and turning this Inſtrument round, he made a notable impreſſion upon the bone. The Eſchar being taken off, the rottenneſs of the Palate bone came in ſight; which being touched three or four times with the Iron Inſtruments red-hot, *Tab.* XIX. *Fig.* VIII, and IX. and nature being aſſiſted by the taking of drying Medicines, made a ſeparation, and the Ulcer being conſolidated, the Patient recovered his former health, and kept open the Iſſue in his thigh for many years with great benefit.

OBSERVATION XXVI.

Of another Tumour in the upper Jaw, contained in a Bagg.

IT is evident, both by ſeeing it, and the Determination of Phyſitians, that the griefs of which the moſt Noble, and Honorable Lady *Maria Cordula Trappin* complaineth of, are a Hemicranium or pain of one ſide of the Head, and a Tumour under the skin of the upper Jaw, containing a matter like to Fat or Hony; the cauſe of theſe

theſe effects, is a pituitous matter, thin, and mixed with Gall; and as the Gall hath its original from the heat of the Liver, and the obſtruction of the Spleen, ſo it cometh partly from the head, partly from the Stomach, and Womb: and for the curing of this, it is neceſſary, that the pituitous and bilious humours be evacuated, the Liver cooled, the Spleen free'd from obſtructions, the Head dried, the Stomach & Womb ſtrengthened, to hinder theſe humours from being generated, or gathering together, ſo as to flow to the head. Upon theſe Indications, I believe I ſhall ſatisfie in my Prognoſtick: and conſidering this indiſpoſition of the Head, and alſo of the lower parts, the Cure muſt needs be difficult. Notwithſtanding (leſt in the ſpace of ſome few months the Diſeaſe may not grow worſe, which certainly it will, unleſs fit Remedies upon the firſt occaſion be made uſe of) I will propoſe what ought to be done in this caſe; and according to my judgment, the Cephalick Vein of the right Arm ſhould be opened, and ſix or ſeven ounces of bloud let out. This being done, for revulſion, and derivation ſake, the Lady ſhould admit a Seton to be made between the firſt and ſecond Vertebra of the Neck; or inſtead of it, apply a bliſtering Plaſter to the Neck every third month, and make an Iſſue four fingers above the left knee, *Tab.* XLIII. *Let.* I. and in the moſt convenient place of the right Arm, *Tab.* XLIII. *Let.* H. As to the hard Tumour, before the uſe of the Acid Mineral Waters, and the Decoction of Sarſa, I would not apply any thing. Let her Body be prepared and purged with theſe gentle Remedies. Let her make uſe of this purging Syrup.

Take of

Syrup of Manna, one ounce.
Extract of Rubarb, a dram.
Diacarthamum, two ſcruples and a half.
Crem. of Tartar, one ſcruple.
Black-Cherry Water, as much as ſufficeth.
Oyl of Mace, two drops.

Mix them into a liquid Syrup.

Then let her take Hydromel with Tartar, and afterwards be purged with the infuſion of Agarick, Rubarb, leaves of Senna, Syrup of Roſes ſolutive, and Manna. Let the heat of the Liver be tempered, and the obſtruction of the Spleen opened by the uſe of the Acid Waters; then for the purging of the whole body, and particularly the head, by reaſon of the pain on one ſide, let her take theſe following Pills.

Take of,

The Maſs of the Golden Pills, Cochiæ

Cochiæ Pills, of each half a dram.
Magiſtery of Jalop, ſeven grains.
With Syrup of Betony, form them into one and twenty Pills, and gild them.

Afterwards let the Head be cleared with gentle Maſticatories, and ſneezing Remedies, leſt the humours too much ſtirred up, be thrown upon the eyes and breaſt, let the head be ſtrengthned with a Cephalick Spirit; of which, to take fifteen drops morning and evening in a few ſpoonfuls of Black-Cherry Water. In the Autumn, after general purging, cooling the Liver, opening the Spleen, and ſtrengthning the head, there is nothing better to diſſolve the Tumour in the upper Jaw than a Decoction of Sarſa, which hath this Prerogative to digeſt, and diſſolve all hard Tumours, but let it be ſo preſcribed that it heateth not the blood.

Take of
The roots of Sarſa, two ounces.
Guaiacum, for the ſtrengthning the Stomach, half an ounce.
Fountain Water eight Pints.
Infuſe them for four and twenty hours, and the boil half away, and ſtrain it.

Take five ounces of this five hours before dinner; and four hours before Supper, and every morning ſweat gently in bed, after the taking of it let there be a ſecond Decoction made for ordinary drink, boyling the Ingredients of the firſt Decoction in ten pints of Water, till the third part be boyled away, adding at the latter end, two ounces and a half of Raiſons, continue the uſe of theſe Decoctions thirty days, renewing every ſecond day the ſecond Decoction, in uſing this Sudorifick there muſt be care taken that ſhe be not bound; and therefore every other day let her make uſe of a Gliſter, or a laxative Potion. Once in a Week let her take the forementioned Pills, or ſomething equivalent to them: and abſtain that day from the uſe of the firſt Decoction. For the weakneſs of her Stomach, let her take half a ſpoonful of the following Spirit of Maſtick.

Take of
Maſtick, three ounces.
Galanga, one ounce.
Cinamom, two drams.
Infuſe them in Spirit of Wine, and diſtill them.

To the outward part of the Stomach apply a Cere-cloath of Caranna, and Tacamahaca, and the like: and if the Tumour doth not yield to theſe Remedies, it muſt at laſt be cut, and theſe few things, the moſt Noble Patient, may ſafely uſe; but I leave them all to the judgment of the moſt famous, and excellent Phyſitian upon the place. From *Ulme* in *Schwaben-land*, *Aug.* 20. 1642.

The Cure of the foreſaid Tumour.

This Tumour, of which I wrote in my adviſe, was on the upper Jaw on the right ſide, bigger than a Hens Egg, white, unmoveable, and hard. The Laſt Autumn (her body being prepared, and bloud taken away,) the Patient made uſe of the Decoction of Sarſa, by which means the Tumour was almoſt diſcuſſed, as appeareth by the Letters written to me from the Lady.

The Extract of a Letter written at Heilbrun, *March* 7. 1643.

The Tumour upon the right Jaw, after the uſe of the Decoction of Sarſa, was decreaſed, and almoſt diſappeared; and it pleaſed Almighty God ſo to direct the Cure, that I thought it had been perfectly well: but unhappily, after Chriſtmas Holy-days, by the conſent and adviſe of a Phyſitian, I went into an ordinary Bath, and was ſcarce come out of it before I felt an alteration, and increaſe of the Tumour, and from hence I feell daily a greater compreſſion, not without pain, as in former time, *&c.* from hence, the benefit of the Decoction of Sarſa is evident.

But after ſome months, uſing the Bath, and her head being heated, the Tumour, upon much griet, and continual ſhedding of tears, increaſed to the former bigneſs. Things being thus, the Patient came from *Heilbrun* to *Ulme*, to be cured. Conſulting therefore with the moſt excellent *D. D. Chriſtopher Eyſenmenger*, Phyſitian to the Republick of *Heilbrun*: we gave our Prognoſtick, hoping for very good ſucceſs if the bone was not hurt. She being therefore purged and let bloud; upon the ſecond of *May*, 1643. we placed the Lady in her bed, binding her hands to her ſide. Then one of the ſtanders by, drew the upper lip, upward, with a hook, that with my ſeparating Knife I might come conveniently between the Tumour, and the firſt Muſcle, which lifteth up the lip. I paſſed this Knife as far as the Suture of the Os Jugale, and ſeparated the Tumour from the foreſaid Muſcle; but lower, neer to the grinding Teeth, and the Gum, I found

found the coat of the Tumour Cartilagineous, and in vain attempted to bring it from the fourth bone of the upper Jaw; ſo that I was forced to cut the bag; which being cut, there flowed out a thick yellow matter like to honey, and the Tumour ſubſided: the matter being taken out, and the Cartilage cut off with the Pincers, I bound up the Wound with the white of an Egg, the Pouder of Chryſolite prepared, and the Aſtringent Pouder of *Galen*. The next day the blood being ſtopped, I found a little ſwelling neer the ſecond Muſcle, which draweth away the lip, under which there was a hole, through which I could eaſily paſs a blunt Probe into the hollowneſs of the bone. On the 12*th* day, in the preſence of Dr. *Eyſenmenger*, I cut into the ſwelling, and dilated the hole. On the 13*th*, after the departure of Dr. *Eyſenmenger*, I found, neer to the Dog-tooth, another ſwelling, hard as a bone; which alſo I cut out with the Pincers, *Tab.* XI. *Fig.* II. The ſpace where the bag was, between the laſt grinding tooth, and the dog tooth, was ſo conſolidated, that not one drop of matter came out; but I kept the hole open, till the bone might skale by the help of the decoction of Sarſa, and the bone being taken way, I healed up the Wound.

OBSERVATION XXVII.

Of a Gun-ſhot Wound in the lower Jaw.

IN the Year 1634. on the 27*th* of *Auguſt*. a *Swediſh* Commander of Horſe, was wounded, at the Battle of *Nordlingen*, into the lower Jaw, a little below the right Ear, with two Bullets, both of which hurt the Tongue, and brake the oppoſite part of the Jaw; ſpoiled the Tonſils. and all the Grinding-teeth, cauſing a great flux of bloud, Faintneſs, and a Feaver; by reaſon of which, the fifth day I preſcribed theſe things following.

Take of
The Syrup of Juice of Citrons,
The Roſe Julep with the Tincture, of each an ounce and a half.
Endive Water,
Plantain Water, of each two ounces.
Mix them into a Syrup.

At night he made uſe of this Cordial Potion;

Take of,
Prepared Pearl,
Red Coral prepared, of each ſeven grains.
The Chriſolite ſtone prepared, ſeven grains.
Roſe Water,
Plantain Water,
Black-Cherry Water, of each an ounce.
Syrup of Coral, two drams,
Syrup of Citron Juice, a dram and a half.
Mix them for a Potion.

This being done for revulſion ſake, I preſcribed a cooling Gliſter.

Take of
Looſening Hony of Roſes,
Oyl of Violets, of each three ounces.
The Emollient Decoction, ten ounces.
Mix them.

With this he voided thrice a black matter, mixed with bloud. After the uſe of the Gliſter, and the ſtopping of the bloud, I unbound the Wound, and found not only the lower Jaw broken on both ſides, but the Tongue alſo wounded, with a great Inflammation, and loſs of ſpeech, and therefore I preſently preſcribed an Aſtringent Gargariſm; and his mouth being waſhed inwardly and outwardly, I put in a little burnt Spunge, dipped in the white of an Egg, ſtirred up, ſprinkled over with the Aſtringent Pouder of *Galen*, and prepared Chryſolite; and the parts about it being anointed with Oyl of Roſes, I bound it up: and by this means that violent flux of bloud was ſtopped. The next day he was ſomething better; but complained of a great pain of the head, and a beating pain of the right ſide, for which, the Median Vein of the ſame ſide was opened, and four ounces of bloud taken away: an hour after, he took Barly Broth, injected through a Tunnel, *Tab.* XXXVI. *Fig.* III. On the 3*d* day, he made ſigns with his fingers of a great pain upon the Temporal Muſcle; whereupon this Cataplaſm was applyed.

Take of
Barly Meal,
Bean Meal, of each ſix ounces.
The Crum of Houſhold-bread, four ounces.
Oyl of Roſes, three ounces.

Red

Red Wine, and
Oxymel Simple, as much as ſufficeth.
Mix them upon the fire into the form of a Cataplaſm.

At night he took Panado, through the Siphon; and a little Barly Water: at midnight he took this Draught, Syrup of the Juice of Citrons, and Pomegranate Wine, of each an ounce and a half; with two ounces of Black-Cherry Water. On the *4th* day, he pointed with his finger, and wrote down, that he felt a great pain in his mouth, about the Uvula. The bloud being ſtopped, I unbound the Wound, out of which, the matter flowed with ſo great a ſtink, that I could not endure it; but the inward parts of the mouth being waſhed with this following Gargariſm.

Take of
Plantain Water, two ounces.
Self-heal Water, one ounce.
Bole Armenick, one ſcruple.
Sal. Prunella, two ſcruples.
Alum, one ſcruple.
Syrup of Myrtles, one ounce.
Mix them.

I looked about the Uvula, and with my Probe touched ſomewhat that was hard and looſe, or a piece of bone which had pricked the parts about it, and cauſed pain about the throat: this piece of bone I pulled out with the teeth of my Pincers: in the evening, being bound, he uſed the former Gliſter. On the *5th* day, he was ſomewhat better; and unbinding the Wound, a great deal of half-digeſted matter came out. On the *6th*, he took this medical Potion.

Take of
Looſening Syrup of Roſes, an ounce and a half.
Extract of Rubarb, one dram.
Plantain Water, as much as ſufficeth.
Chryſolite prepared, ſix grains.
Mix them.

Which gave him four ſtools: and the Wound was bound up with this Digeſtive.

Take of,
Turpentine waſhed in Scordium Water, two drams.
Poudor of Orris, and

Round Birthwort, of each half a dram.
Syrup of dryed Roſes, two drams.
Mix them for a Digeſtive.

Outwardly, there was applyed a Tent dipped in Oyl of Violets, and Oyl of Earth-worms; there was nothing uſed to the Tongue but Roſe Water, and the Gargariſm. On the 7th day, he began to ſtutter, and pointed with his finger, ſignifying that his throat was ſore. I looked in, and drew out a piece of the bone, and then bound up the Wound as the day before. On the 8th, he complained of the Colick; but after the uſe of the ordinary Gliſter, to which, a portion of Oyl of ſweet Almonds was added, he was much better.

OBSERVATION XXVIII.

Of a Periodical Pain of the Teeth, moſt happily Cured.

ALthough the Pill of *Herlicius* held in the Mouth doth wonderfully appeaſe all pain of the Teeth, which is made out of the Seeds of Parſly, Henbane, Opium, and Syrup of Poppy.

Take of
The Seeds of Parſly, two grains.
Henbane,
Opium, of each four grains.
Syrup of Poppy, as much as ſufficeth.
Mix them, and make them into one Pill.

Yet for the curing, or hindering the Periodical return of the Pain, which hath often deceived the moſt excellent Remedies; *D. D. Spigelius*, with moſt excellent ſucceſs, did uſe to cut that part of the Anthelix, which doth immediately touch the upper part of the Tragus, with a long ſharp Iron Inſtrument, red-hot, *Tab.* XII. *Fig.* L. and then healed up the Wound again. By this new way of Chyrurgery, that little branch of the Carotidal Artery, which paſſeth from the Anthelix of the Ear, to the Teeth, is cut in pieces, croſswiſe: ſo that the Afflux of the Humours being intercepted, the pain returns no more. The wonderful efficacy of this Operation, the Author experienced firſt, in himſelf; and afterwards, in my preſence, and in not a few others.

OBSER-

OBSERVATION XXIX.

Of a ſtrong Apoplexy, upon breeding Teeth.

IN the Year 1638. upon the 27*th* of *February*, about eight at night, *Ordolphus*, Son of the Illuſtrious, and generous Baron *Ferdinand Geizkofther*, between the 12*th* and 13*th* month of his age, upon the difficulty of breeding Teeth, dyed of a ſtrong Apoplexy. Four days days before his deceaſe, I propoſed to his Parents, the burning of the hinder part of his head, which had helped many others, as I had often experienced: but the Parents refuſing it; I made uſe of ſuch Remedies, as are uſed in theſe great ſwellings, and itching of the Gums, Fever, and Catarrhe. Notwithſtanding which, without any manifeſt Convulſions of the parts, any noiſe, or grinding of the Teeth; he, who was the laſt hope of this Family, being taken with an Apoplexy, departed this life. But that this time of breeding Teeth, is very dangerous, eſpecially when they breed the Dog-teeth, about the thirteenth month, is evident from the 25*th Aphoriſm* of *Hippocrates*, in the third *Section*: and from the Common ſaying.

Parents are of their Children ne're aſſur'd,
'Till they 'ave the cutting of thoſe Teeth endur'd.

OBSERVATION XXX.

Of the String of the Tongue, ill broken with the Nails.

IN the Year 1628. on the 2*d* of *March*, the Wife of *Jacob Zimmermans* brought forth a fine Boy, the Ligament of whoſe Tongue a Midwife (whoſe name I ſpare) cut in pieces with her Nails, that he might afterwards ſpeak the more articulately: but ſo great a pain and inflammation ſucceeded this Operation, that it hindered the Child from taking hold of the Nipple, or rather from ſucking. The Parents aſcribed this inability of ſucking to the ſtring of the Tongue; and thinking the Nurſe had not ſufficiently delivered the Tongue from its Ligament, ſent for a Chyrurgion, who with the like Imprudence, cut in pieces both the Ligament, and Veſſels of the Tongue;

out of which, the bloud flowed to the Wind-pipe, and the third day choaked the Child. The Child being dead; the Mother began to complain of ſwelled Breaſts, by reaſon of the concretion of the Milk; and the right breaſt being ill handled, at laſt degenerated into an Ulcerated Cancer: and the Woman, after ſuffering moſt grievous pains, died.

A Girl new born, after that a Chirurgion had cut the ſtring of her tongue with a common Lancet, by reaſon of the pain ſhe was able to ſuck very little of her Mothers Milk, and the right breaſt growing hard, ſhe put her Child to the left; and the pain under the tongue being mitigated, the Milk returned into both Breaſts; but the hard Tumour would not be ſoftened without the Child ſucking it; and ſhe perceived already, that the Vertebræ of the Childs back were diſtorted towards the right ſide, occaſioned by applying the Child always to one Breaſt. From theſe two Examples it is apparent how dangerouſly the ſtring of the Tongue is often rent by the Midwives Nails, and the Chyrurgions Lancet; and how much the lawful and juſt manner of doing it is to be eſteemed: which, with many cautions, is propoſed to us by *Fabritius ab Aquapendente*: concerning which, ſee *Tab* XXXVI. *Fig.* VIII.

OBSERVATION XXXI.

Of the Kings-Evil, covering the whole Neck.

IN the Year 1631. in the Month of *January*, the Wife of *Joſeph Keonigs*, troubled with the Kings-Evil all about her neck, ſent for me to adviſe her; to whom I preſcribed a Pouder, mixed of equal parts, of Sugar, Ginger, and Turbith, which doth peculiarly purge Phlegm, the cauſe of theſe Scrophulous Tumours, from the deepeſt, and remoteſt parts,, according to *Avicen, Lib.* 4. *Fen.* 3. *Tract.* 2. *C.* 10. But becauſe it was againſt the nature of this Worthy Perſon to drink pouder in Wine; I preſcribed this following Mixture three times, which ſhe took without offending her Stomach.

Take of
Turbith Poudered, four ſcruples.
Preſerved Ginger, as much as ſufficeth.
Mix them into an Electuary.

The

The Body being ſufficiently purged from thick humours, I applyed to the part affected, the Ceratum Oxeleœum, ſoftned with Oyl of Lizards; the deſcription of which is this.

Take green Lizards alive, as many as you pleaſe; boil them in common Oyl till the Lizards be burnt, and the Oyl be black; what is ſtrained out, put into a glaſs, and ſet in the Sun, till the dreggs fall down, and the Oyl cleareth, and becomes of a brown colour; and I exhibited for thirty days together, every morning, ſix drams of the Electuary which *Hercules Saxonia*, and *Johannes Prevotius* eſteemed as a great ſecret, and certain Remedy in the Cure of the Kings-Evil, and prepared it thus.

> Take common Lizards, or green Lizards, the heads and tails cut off, and the inwards taken out, infuſe them by themſelves in very ſharp White-Wine Vinegar, and made without Pepper, for four days, then drie them, and ſteep them in other Vinegar, and drie them again, either in the Shade, or Sun, and Pouder them; this being done, mix an ounce of the Pouder with four ounces of Hony: which is to be taken for thirty, or forty days: two drams is the doſe for children, but for men or women, half an ounce, ſix drams an ounce at higheſt.

Theſe Remedies being given, and applyed, our Patient Recovered in the ſpace of a Month. *Johannes Riolan.* l. 2. *Anthropographiæ*, 15. *de Meſenterio*, writeth, that ſcrophulous Tumours never break out in the body unleſs the Meſentery be Scrophulous, which alſo *Guido*, and *Ingraſſias* do teſtifie, ſuch a Meſentery filled with innumerable kernels, I found in the body of the Noble Lady *Elizabeth*, which I opened becauſe the body was full of theſe Scrophulous Tumours, and I ſought after the cauſe of the Dropſie.

I have experienced the Vertue of that marvellous Ointment which *Fabritius ab Aquap.* l. 1. *Pentateuch.* c. 21. commendeth in the Kings-Evil when broken out, in Nun, and in a young Maid, one having Ulcerated Tmmours in a the Breaſt, the other in the Neck.

OBSER-

OBSERVATION XXXII.

Of a Quinſie, hindering Swallowing and Breathing.

A Noble Woman of *Vlme*, on the 7th of *July*, 1627. while her Courſes were upon her, in the evening, was taken with a dangerous Quinſie, which made her breath with difficulty, and hindered her from ſwallowing either Meat or Drink: being called to her, I preſently order'd a Laxative Gliſter, and that being come away, ſix ounces of blood to be taken out of the Median Vein of the Arm. On the 8th of *July*, a ſtronger Gliſter was given her, and after it had done working, ſhe ſitting up in her Bed, a Barber opened the Veins under the Tongue, and applyed Cupping-Glaſſes, without Scarification, to the inſide of her Thighs: which he had alſo done the day before, with a great deal of Fire, not only leſt the Menſtruous Purgations ſhould be ſtopped, but alſo to hinder the Humours flowing to the part affected. Afterwards I removed the Cupping-Glaſſes, and preſcribed the Patient a Gargariſm; which, in all dangerous Quinſies, in the beginning of the Augmentation, is highly commended to waſh the Throat therewith often in a day.

Take of
Muſtard Poudered, half a dram.
Sharp Wine-Vinegar, one ounce.
Plantain Water, three ounces.
White Sugar, two drams.
Mix them.

Which in the ſpace of fourteen hours, partly by Repelling, and partly by Diſſolving the Humours, delivered the Patient from the Jaws of Death.

OBSERVATION XXXIII.

Of a Face burnt with Gun-Powder.

IN *November*, 1634. A Grocers Son had placed in his Shop, a pan of live Coals, ſo neer to a Cheſt in which there was laid up ten pound

found of Gun-Pouder, that the great South-weſt Wind blowed a ſpark out of the pan into the Cheſt, which was not covered, whereby the Gun-Pouder being ſet on fire, it burnt the Boy's Face ſo, who was warming his hands, that he could neither lift up his Eye-lids, nor take Meat and Drink into his hands, nor receive it with his mouth. The Boy's Parents being very ſolicitous to reſtore him, deſired my advise the firſt hour he was hurt; for whoſe greater ſatisfaction, I preſcribed this ſingular good Liniment, with which the Chyrurgion anointed the parts four times in a day, and in a weeks time healed that great burning without any Skarr.

Take of
Freſh Butter, nine times, or oftner, melted, and waſhed in Diſtilled Frog-ſpawn water, ſix ounces.
Oyl of the Yolks of Eggs, two ounces.
Mix them, and make them into a Liniment.

Which, in any Burning takes out the Fire, mitigates the Inflammation, hinders Bliſters, and takes away the Pain.

OBSERVATION XXXIV.

Of a Gutta Serena, or Blindneſs, Cured by a Seton burned in the Nape of the Neck.

IN the Year 1639. *Maria Rauhin*, born in the Teritory of *Ulme*, about the 26*th*. Year of her Age, upon the ſuppreſſion of her Terms, complained of that which is commonly called, a Gutta Serena of both her Eyes, and being taken into the Hoſpital. I opened the *Vena Saphena* of the right Foot, and took away ſix ounces of blood, and then preſcribed theſe uterine cephalick Pills.

Take of
Pills of Caſtor two ſcruples.
Extract of Cochiæ one ſcruple.
Magiſtery of Jalap ſix grains.
Mugwort water as much as ſufficeth.
Make them into XXI. Pills.

And a purging Wine to purge her Head, and whole mass of humours. After the use of these Purgers, I burnt an Issue in the right Thigh, four Fingers above the Knee; and after a month her courses began to flow, but in small quantity, and therefore I prescribed to the Patient, a Dose of Ammoniacal Pills, whereby they were very evidently encreased.

About the third New Moon, she had only a show of them, and therefore I repeated the use of the Pills, upon which they came down well. The fourth month she had them in due time, and quantity; but was extremely sad, that she had not recovered her sight: and seeing that I had formerly in the Wife of *John David Commerel*, and *John Conrade Ehinger*, found a Seton made in the Neck, to be most excellent in these obstructions of the Nerves, I made a Seton, and kept the Ulcer open for twenty days, till the Patient most joyfully recovered her sight, and her courses coming duly, she healed up the Issue in her Thigh, and enjoyed perfect health from that time till, 1645.

OBSERVATION XXXV.

Of a Venerial Excrescence of flesh in the Nose.

A Country-man of *Fungingen*, was troubled with a Venereal Sore in the Nose, and an Excrescence, which stopped up the Nostrils in such manner, that he could not breath through them: for which I prescribed him a sweating Drink of Guaicum; which being ended, I consumed the Excrescence of the Nose with this following Ointment.

Take of
The Liniment prescribed by *Prevotius* in his Medicines for the Poor against Caruncles in the Urinary passage one ounce,
Mercury precipitate a dram and half,
Mix them into the form of an Ointment.

In which dip your Tents which are to be put into the Nose. The Caruncles being eaten away, I put Leaden Tubes into the Nostrils, dipped in the Ceratum Divinum, till the Ulcers were consolidated;

in

in these Ulcers some commend a mixture of the decoction of Sassafras, Hony of Roses, Præcipitate poudered, and Aloe of Zoccotara, with which they wash the Nostrils often in a day, and heal them.

With this most excellent Ointment after a sudorifick course, I freed a Weaver of *Ulme* from the same Disease, without any pain, in a weeks time.

OBSERVATION XXXVI.

Of an incureable Gutta Serena, of both the Eyes.

IN the Year 1642. *Johannes Hegelen* an Apparitor of *Ulme*, complained of an Amaurosis, which the *Moderns* call a Gutta Serena; and being brought into the Hospital, he took often these Pills for the Eyes.

Take of-
The mass of Pil. Lucis,
Pil. sine quibus, of each half a dram.
Magistery of Jalap, six grains.
Distilled Oyl of Fennil two drops.
Eye-bright-water, as much as sufficeth.
Make them up into twenty seven Pills.

But receiving no benefit at all by them, I ordered first a blystering Plaister, and then a Seton to be made in the Neck: both which remedies being made use of without any perceivable advantage to the Patient, I called to mind that which I had inserted amongst my collection of Observations in the Year 1620. The Body of a certain poor Woman of *Padoa* (who had been troubled with an Amaurosis for twenty years together, coming by degrees upon her, and at last with an inward Cancer upon the Left Breast, which by repelling Medicines was driven in and killed her) was brought into the Anotamical Theatre; where, in the presence of many Students, I sought for the true cause of this blindness; and opening the Skull, I found the first and second Ventricle of the Brain, sunk down, and glued together; so that the Animal Spirits could not be carried through them to the Eyes: upon which, by degrees, the Optick Nerves withered away; for they appeared as little again, as in others. Thus the Amaurosis came upon her, the eye it self being not at all

hurt,

hurt, but ſtill well nouriſhed by the Artery coming to the root of it, which was full and fair, and ſometime ſuffered an Inflammation from the regurgitating of the courſes. The moſt excellent *Spigelius* added in his Anatomical Lecture (Reading upon the head of this poor Woman) that this blindneſs could no ways be Cured, although *Pauſanius* affirmeth, that a Wound on the Forehead did once take away ſuch a Gutta Serena. From hence alſo it is evident, that this Diſeaſe doth not always ariſe from the obſtruction of the Optick Nerves; but doth only inſinuate ſuch a diſpoſition. Neither is it to be wondered at, if it yield not to the moſt Experienced, and Methodical way way of Curing.

OBSERVATION XXXVII.

Of a Depreſſion of the Skull of a Woman with a Fiſſure.

IN the general cure of Contuſions of the Head, I formerly took notice, that the Skull of thoſe who were grown up, is ſeldome Depreſſed without a Fiſſure, either in the inward, or outward Table, unleſs in thoſe, whoſe Skulls are naturally ſofter than ordinary. This is confirmed by this Obſervation of a Serving-Maid of *Michael Rietmans*, who in the thirtieth year of her age, carrying a Veſſel of Water upon her head, fell down, and hurt the right ſide of the fore-part of her head: which being much ſwelled, *Nicholas Rentte* was ſent for, who applyed a Lamb-skin warm to the part: the next day the Skin being taken off, perceiving a hollowneſs, I declared to the ſtanders by, that there was a Depreſſion of the Skull, and the neceſſity of dividing the Skin; which being granted, I cut the skin with an Inciſion-Knife, into the form of a Croſs, and preſently perceived a ſmall Depreſſion on the outward Table of the Skull, without any Fiſſure. The Wound being bound up, I was very doubtful whether the inward Table was intire, becauſe the fall was from a high place; and therefore I propoſed the uſe of the Trepan, but the Patient would not admit of it, declaring then, that this Wound or Depreſſion, if there were a Fiſſure in the inward Table, could not well be healed, without Perforating the Skull; but if that were intire, the Patient might with leſs danger be Cured. I kept the Wound open 12 days, and not any one Symptom happening, which did argue either the Fiſſure of the Skull, or any other hurt of the Brain, I healed it up.

OBSER-

OBSERVATION XXXVIII.

Of a Capillary penetrating Fiſſure on the Head, Cured both in a Boy, and in a man.

IN the Year 1644. a Cart with two Horſes empty ran over *David Heilbronner*, and hurt the Sinciput on the left ſide, leaving the Bone bare, and cauſing a Fiſſure on the Skull; which being obſerved, and ſhown to the Parents, *Ezekiel Vogel* a Chyrurgion dilated the Wound, applying a Stupe, dipped in an Aſtringent, whereby the requiſite ſcraping of the Skull might be ſafely performed. The next morning, being ſent for, I found the Skull freed from the Pericranium, and fractured with a doubtful Fiſſure; and being provided with Scraping-Irons, I preſently ſcraped down the Fiſſure below the ſpace between the two Tables, where I perceived the inward Table of the Skull to have only a capillary Fiſſure: whereupon, removing the Scraping-Irons, I dreſſed the Wound, and the Bone, with my accuſtomed Dreſſings, and happily reſtored the Boy in the ſpace of 24 days: who, without the uſe of the Scraping-Irons, as frequent Experience teſtifieth, might have periſhed. The reaſon why I did not Perforate the Skull, may be ſeen in my Diſcourſe upon a Capillary, and Penetrating Fiſſure of the Skull, *Tab.* XXXI.

In the ſame manner I reſtored *John George Hornung*, who on the 28*th* of *December*, 1635. received a Wound on the Temporal Muſcle, with a penetrating Fiſſure of the Skull, but Capillary.

OBSERVATION XXXIX.

Of a Contuſion on the hinder part of the Head, helped by the Scraping-Irons.

IN *September*, 1637. *Mary Lutzen*, being miſerably handled by the *Bavarian* Souldiers, complained of a violent pain on the hinder-part of her head, cauſed by an Empirick, who preſently digeſted the Tumour with Suppurative Medicines, and then applyed Diſſolvents for fourteen days; till the Purulent matter not finding a paſſage, by reaſon of the thickneſs of the Coats, Corroded the Skull,

Skull, and the Pericranium; from whence theſe pains proceeded: and ſeparated from the bone, the Inſertions of thoſe Muſcles which are called *Splenij*, and *Recti*, and ſerve to extend the head. The Patient being received into the Hoſpital of *Ulme*, deſired the Chyrurgions help: wherefore, after Generals, and a ſlender Diet, I cut the outward Skin with an Incision-Knife, in the ſhape of a Triangle, down to the Bone, taking care, leſt the Fibres of the foreſaid Muſcles ſhould be cut in pieces; and hereby making a paſſage for the included mater to flow out, I found the bone rough, and corroded with the matter: which being evacuated, I filled up the lips of the Wound with an Aſtringent Medicine well down; and the next day ſcraped the rough bone all about with the Scraping-Irons: this Operation being performed, I ſprinkled the Cephalick Pouder upon the Skull, and applyed a Digeſtive to the Wound; till that within two days time the Skull was covered over with ſolid Fleſh: the Bone being covered, I Incarnated the Wound with Betony Oyntment, and Cicatrized it with the Cerraum Divinum. Twenty days after the ſcraping, the Skull threw off ſome Skales, and the pain of the Head returned: but pulling out the little bones, with the Pincers, the pain preſently ceaſed. Hereby young Chyrurgions are to be admoniſhed; if the Contuſions of the head ſuppurated, yield not to diſſolving Medicines, ſo long time applyed, they are not to continue the uſe of them: but rather, without any delay, or fear of danger, to cut open, in due manner, the Coverings of the Skull; leſt the Quitter continuing a long while, under a very thick Coat, become Malignant, and Corrode the Skull, and Pericranium: See *Tab.* XXXII. a Contuſion of the Head, without hurting the Skin or Skull.

OBSERVATION XL.

Of a Fiſtula on the Breaſt, with Corroſion of the Neck-Bone.

ON the 10*th* of *November*, 1627. *Sabina*, the Wife of *John Majer*, Citizen, and Victualler of *Ulme*, came to me, and ſhewed me a Tumour with a Fiſtula, above the left Clavicle, the Orifice of of the Fiſtula being ſo narrow, that it would ſcarce receive the point of a pin.

Enquiring into the cauſe of this, ſhe informed me, that half a year before, ſhe laboured under a violent Fever, which terminated in an Ab-

feeſs upon this part. This Abſceſs the Phyſitian, otherwiſe very experienced, and *Matthew Memminger*, a Barber, after Suppuratives, opened with a Cauſtick, not very pleaſingly, (for it being applyed for 36 hours, it cauſed very ſharp pains, and frequent faintings) and took out the Eſchar, which was about the bigneſs of a Dollar, with a Lancet; which being violently taken away, there flowed out a yellow ſtinking matter, but in ſmall quantity. This Ulcer they kept open four weeks, and at length healed it up, but there remained a conſiderable Tumour and hardneſs, which they committed to Nature to diſſolve. After ſix weeks this Tumour grew bigger than the former; which after means to ſoften, and ripen it, they opened with a Raſer, to exclude the matter, which again was little and bilious; and this being voided, they healed it up again, and ſo the third and fourth time they cut it open, and conglutinated it again; not at all ſuſpecting any injury done to the bone, which ſo many relapſis might eaſily have indicated: ſo that at laſt the abſceſs degenerated into a Fiſtula: ſo that as often as the Patient moved her left arm, or either of her feet, ſhe ſuffered moſt fierce pains, and fainted way. Upon this, her Relations deſiring my aſſiſtance, I preſcribed Remedies to evacuate bilious humours abounding in her body: the abundance of which, the hot and dry conſtitution of her body did demonſtrate; as alſo the yellow matter diſcharged through the Oriſice of the Fiſtula, her yellow colour all over, and the foregoing Fever. Her body being prepared, and purged ſeveral times very well, I dilated the narrow Fiſtula (not with Iron Inciſion-knives, by which, not only the Pectoral Muſcle, already hurt by the former Inciſions might be more offended, but alſo the jugular Veins come to be hurt or cut, to the loſs of life, as well as bloud,) but with a Tent, made of the Root of Gentian prepared (that is, cut into the ſhape of a Tent, dryed upon a Stove, and a thred faſtened to one end of it) which I put into the hole, keeping it in with a Plaiſter of Diapalma, and the Bandage of the Breſt-plate, in the laſt *Table*, Letter *S*. keeping it in four and twenty hours. The next day I drew out the Root with the Pincers, it being ſwelled up with a bilious undigeſted matter, and black at the end; and ſearching the cavity to find out the cauſe of this colour, I found the bone rough and moveable: for the greater dilatation therefore of the hole, I put in a bigger Root, with the Plaiſter Diacalcitis, and the former Bandage to keep in the Root, and anointed the parts about it to hinder any Inflammation, which the pain, ariſing from the Dilatation, although it were not vehement, might eaſily cauſe. The third day I put in another bigger Root, and ſo gradually I encreaſed daily the bigneſs of the Tent, till the hole was big enough to take out the bone, which was almoſt ſeparated. The ſixth day I filled up the Fiſtula with Buttons, made of Spunge, faſten-

ed to a thread. ſo as the thread hanged out of the hole, and put over them a Plaſter, and the Breaſt-plate Bandage, and anointed the parts about.

The preparing of the Buttons is thus.

Take a new Spung which hath never been dipped in water, and put it into an equal quantity of Wax and Roſen melted together; then preſs it out in a ſtrong preſs, and drie it in the ſhade: out of this dried Spunge cut round Buttons, and faſten them to a thread.

The ſeventh day, the Spunges being taken out, the Fiſtula was very open through; which, taking hold of the bone with the Pincers, I drew it out without any great pain. The eighth day, the bloud being ſtooped, I ſprinkled upon the ſound bone uncovered, this following Pouder.

Take of,

The Roots of Orris,
Birthwort,
Hoggs Fennel, of each half a dram.
Euphorbium, half a ſcruple.
Myrh a ſcruple.

Mix them.

Which I applyed with dry Lint, till the bone was covered over with firm fleſh. I cleanſed the Ulcer daily, with ſprinkling the Pouder of refined Sugar upon i which doth alſo mitigate the acrimony of the Gall, and at length I cicatrized it with the Plaiſter of Diapalma. To the remaining hardneſs I applyed the Plaiſter Oxelæum, with Linnen thrice doubled dipped in Wine of the decoction and preſſed out, that the reliques might be diſcuſſed, and any new Flux of humours to the weak part be prevented: by this means in the ſpace of fourteen days, I delivered this Woman from a moſt dangerous and troubleſome affliction, as ſhe her ſelf is ſtill ready to teſtifie, who now hath lived in exeellent health ten years together, with a ſecond Huſband, *George Hebich*, a Dyer.

OBSERVATION XLI.

Of a Wound on the Breaſt, with a Fracture of the Rib.

Johannes Vandeeiſen of *Augſburg*, a Graver in Braſs, and a publick Champion of the Feathered Party, at the *Roſe-Inne* in *Ulme*, at eleven at night, received a Wound from a Baker, addicted to the Martiate

tiate Faction, upon the left ſide, about the fourth Short-rib: the Cartilaginous part being cut in pieces, the Kell coming out with a great loſs of blood, attended by divers Symptoms; as Fainting, Vomiting, and a great pain and ſwelling about the Midriff. Being called, I preſently put in the Omentum, or Kell intire, and put a Tent into the Wound, with Hemp-hards dipped in the Yolk and White of an Egg beaten up together, ſprinkled over with an Aſtringent Pouder, and faſtened to a thread, and over it the Diapalma Cerate, and the Bandage of *Soſtratus*. On the 4*th* of *January*, about ſix in the morning, I went to the Patient, that I might unbind, and look upon his Wound; but it not being expedient, by reaſon of his weakneſs, and for fear of his bleeding again; I gave him Chicken Broth, mixed with Aſtringents; and for the Colick, I applyed a Cataplaſm to his Belly, made of ſuch Ingredients, as digeſt, diſſolve, and take away pain; and for the ſtopping of the bloud, and preſerving his ſtrength; I preſcribed this Electuary.

Take of

Old Conſerve of Roſes,
Conſerve of Comfrey, of each half an ounce.
Trochies of Amber,
Sealed Earth,
Red Coral prepared, of each a ſcruple.
Pearl prepared, half a ſcruple.
Syrup of Myrtles, as much as ſufficeth to make an Electuary; of which, he took a dram often in a day.

For the ſtreightneſs of his Breaſt, and difficulty of Reſpiration, I ordered this following Lohoch; by the frequent uſe of which, he ſpit up a thick and tough matter.

Take of

Syrup of Maidenhare,
Liquerice, of each ſix drams.
Colefoot,
Speedwel, of each half an ounce.
Tablets of Diatragacanthum, three drams.
Violet Water, as much as ſufficeth.

Mix them, and make them into a Lohoch.

For the Pain, Swelling, and Inflammation about the Wound, I applyed the former Cataplaſm. On the fifth day of the month, the Pain, and Swelling ſomewhat abated, and the bloud being ſtopped, I unbound the Wound, and put in a Tent dipped in a Digeſtive,

and faſtened to a thread, and over it the ſame Cerate Cataplaſm, and Bandage as before. The ſame day I gave him Broth made with Burnet, Setfoile, Comfrey, Horſetail, Speedwel, Strawberry leaves, and Melon ſeeds, that the matter contained in the Belly might be diſcharged by the Urinary paſſages, mixing Aſtringents with them, leſt without the uſe of theſe, he ſhould bleed a freſh. Towards the evening he complained of an itching in the Urinary paſſage, a ſign that the matter in the cavity of the Belly, by the benefit of the Diureticks, was voided by Urine.

On the ſixth day of the month the pain went off, and the ſwelling about the Wound vaniſhed; and the Patient ſaying that he felt a greater itching when he made water, I looked upon the Urine, and found a great deal of matter mixed with it.

On the *7th* day the Patient complained of a pain upon the right Shoulder, and towards the evening, of a pain of the Liver, Fever, and dry Cough.

And upon the *8th*, the former pains, and Feveriſh heat increaſing, I took four ounces of blood out of the Baſilica of the right arm; which being done, the pains ceaſed after an hour or two, and the Fever decreaſed.

Upon the *9th*, the matter was digeſted, and the Patient was otherwiſe well; ſo that I began to conſolidate the Wound, diminiſhing the Tent daily, till it came to be Cicatrized; but the Patient in the night feeling pains like to the Colick, about the Os Sacrum, or Ramp bone, and the Region of the Bladder; I preſcribed, upon the *10th* day, this following Potion.

Take of

Oyl of ſweet Almons freſh drawn, three ounces.
The beſt Manna, two ounces and a half.
Camomile Water, as much as ſufficeth.

Mix them into a Potion.

Upon taking this, he vomited up a great quantity of Choler, and had twenty Stools, voiding with them much bilious matter, which had been the cauſe of theſe pains: after this evacuation, the Patient was better, and the pains altogether abated, till the *23d* day; at what time, keeping a bad Diet he fell into a bilious looſneſs, and by the perſwaſion of ſome Women, he fed eagerly upon Sloes, which gave him the Colick, with a continual deſire of going to ſtool, without being able to do it. For which, on the *24th*, I gave him, in Succory water, a dram of Rubarb poudered; and two hours after his taking the Rubarb, this following Potion.

Take

Take of
Oyl of Almonds newly drawn,
The Decoction of Camomile, of each three ounces.
Mix them.

The Clyſter being ſufficiently evacuated, about eleven a Clock in the morning, both the Colick, and Teneſmus ceaſed. On the 28*th* the Wound was Cicatrized with the Ceratum Divinum, ſo that the Patient not complaining of any pain about that part, or any difficulty of breathing; on the 29*th* he went abroad, and drunk with his Companions till midnight: on the 4*th* of *February*, being perfectly well, he prepared for his journey homeward with his Wife, and being angered for a ſmall matter handſomly Cudgell'd her. Hearing of which, I admoniſhed him, that for the future, he ſhould, as much as poſſibly, keep himſelf from paſſion.

OBSERVATION XLII.

Of a dangerous Wound on the Breaſt.

ON the 9*th* of *February*, 1633. the Noble *Nicholas Dietrick*, Sirnamed *Sphereiter*, received two Wounds in a Duel, from the Generous *Ritzwein*, a *Swediſh* Serjeant Major; the firſt of which was on the left Wriſt, running down to the hand, the Veins and Tendons being hurt. The other upon the right Breaſt, a fingers breadth below the Pap, which penetrated into the cavity of the Thorax, hurt the Intercoſtal Veſſels, and cauſed ſpitting of bloud. By reaſon of theſe dangerous Symptoms, and faintneſs eſpecially, he was carried home in a Coach with four Horſes, where all things requiſite for the Wound were propoſed: amongſt others, I judge this worthy to be noted, before the firſt binding up of the Wound, ſome out of that great throng of ſtanders by ſaid, they would ſuck out the bloud which was within the Thorax; and being permitted, they did ſuck indeed, but it was not bloud, but rather Gold; and one while he was ſucking ſtole privately a Diamond Ring from off the Patients finger, but being found out, he reſtored it again. Being ſent for, I looked upon the Wound on the Breaſt, and putting a blunt Probe through the hole into the cavity, I found it filled with bloud; and from his ſpitting of bloud, ſuſpected that the Lungs were wounded; and therefore

I caſt in with a Siphon, through the Wound with the White of an Egg, with the Aſtringent Pouder of *Galen*, Chryſolite prepared, and a little Plantain Water. I put alſo into the Wound, a Tent made of Hemphards dipped in the ſame, and tied to a ſtring. I anointed the parts about it with Oyl of Roſes, and put over it a Cerate of Diapalm, and bound it up with Linnen thrice doubled, dipped in Red-wine, and preſſed out, and the Bandage of *Soſtratus*, *Tab.* XXXII. *Fig.* VI. To the Wound in the Wriſt, the ſame Remedies were applyed for the ſtopping of the blood; and to preſerve his ſtrength, and to ſtop the bloud in the Breaſt, he often took this following Water.

Take of
- Burnet Water,
- Black-Cherry Water,
- Roſe Water,
- Plantain Water,
- Speedwel Water, of each an ounce and a half.
- Cinamon Water, a dram and a half.
- Spirit of Lilly in the Valley, a dram.
- Pouder of Chryſolite prepared,
- Lapis Hæmatites,
- Red Coral, of each half a dram.
- Bezoar, ſeven grains,
- Prepared Pearl, a ſcruple.
- Pearl Tablets, half an ounce.

Mix them.

For his thirſt, he drank Barly water mixed with Syrup of Coral, and Tincture of Roſes; ſtrictly obſerving a ſlender Diet. For his Fever, and ſpitting of bloud, both for Revulſion, and Ventilation ſake, I ordered the Liver Vein to be opened of the ſame ſide, and four ounces of bloud to be taken away. This being done, he took nothing but the Decoction of Barly, mixed with the Tincture of Roſes, and Barly Ptiſan for his Supper. The next morning he complained that he had ſlept little or nothing in the night, and therefore at eight a Clock in the morning he took this following Gliſter.

Take of
- The Roots of Sorrel,
- Marſhmallows, of each half an ounce.
- The Leaves of Burnet,
- Agrimony,
- Sorrel,
- Mallows,

Vio-

Violets,
Speedwel, of each half a handful.
Flax Seed, half an ounce.
Fennel Seed,
Citron Seed, of each a Dram.

Boyl them in a convenient quantity of Water to ten ounces, and add to it, when its ſtrained out,

Hony of Violets, three ounces.
Oyl of Violets, two ounces.
Oyl of Camomile, one ounce.

Mix them.

This Gliſter wrought thrice, and after that, I unbound the Wound; out of which there flowed a little bloud. At the ſame time the Patient complained of a great Pain, and Heat of that ſide which was wounded, by reaſon of the heat of the bloud gathered together within the Thorax: and ſeeing that the bloud could not get out, by reaſon of the ſtreightneſs of the Wound, although the Patient were placed in the ſame Poſture in which he was Wounded: it was neceſſary to make way for the bloud, either by dilating the Wound with the Inciſion-knife, *Tab.* XII. *Fig.* I. and *Tab.* XXXVII. *Fig.* V. or by a new Section between the third and fourth Rib, beginning to reckon from the lowermoſt, according to *Hypocrates* his way, who began his account from the laſt or twelfth; becauſe this may eaſily be felt with the fingers, and it is the ſame, as to ſay, between the ninth, and tenth Rib, beginning to reckon from the uppermoſt. The Dilatation of the Wound had been in vain attempted; becauſe the greateſt part of the bloud contained in the Breaſt, was gathered together about the Midriff: nor could I make the Paracenteſis to any advantage, either on the right, or left ſide; in the left it had not been convenient, becauſe the matter was gathered in the right; nor could it be performed in the right, by reaſon of the great ſwelling and pain of the Back and Liver; and to expect the evacuation of it, by ſpitting, or Urine, would be too dangerous, by reaſon of the great quantity of matter, which threatned the ſuffocation of the natural heat. Whereupon, I bound up the Wound as the day before, concluding with my ſelf to proceed to another Operation, and provide a Pipe, or Canale, with a Stopper of Gold, to be made, *Tab.* XXXVII. *Fig.* IV. *A.* which might eaſily be bent into the ſhape of a Triangle, or Semicircle. This Inſtrument bent like a Triangle, I put gently into the Cavity of the Thorax; and drawing out the Style, a great quantity of bloud (without any ſucking with the mouth) flowed through the the Pipe. After this Evacuation of the bloud, I put in the winged Pipe of Gold, *Tab.* XII. *Fig.* XII. covered over with *Galen*'s Aſtrin-

gent Pouder, prepared Chryſolite, and the White of an Egg, and over that a Plaſter of Diapalma, a new Spunge dipped in Red-wine, and preſſed out, Linnen doubled, and the Bandage of *Soſtratus*. Upon this Evacuation, the Patient reſted better the whole night. The third day after he was wounded, I put the Inſtrument again, into his Breaſt, and took out a Pint and a half; which Evacuation he bore very well, to the admiration of the ſtanders by. After his Dinner, which was made of Ptiſan, and the Decoction of Barly, he took at night this Emulſion.

Take of
Melon Seeds, half an ounce.
Poppy Seeds, a dram.
Strawberry water,
Burnet water,
Speedwel water,
Water-Lilly water of each two ounces.
Make an Emulſion, to which add,
Chryſolite prepared,
Prepared Pearl,
Red Coral prepared, of each nine grains.
Syrup of Violets, an ounce.
Mix them.

After the uſe of this he reſted well all the night. On the 4*th* day, making water, he felt a very ſharp pain in the Urinary paſſage; I looked upon the water, which was thick and ſtinking, a certain ſign that the matter contained within the Breaſt, did tend towards the Urinary Veſſels. In the evening, by reaſon of his being bound, he uſed this Gliſter.

Take of
The following Decoction, ten ounces.
Hony of Violets, two ounces.
Caſſia newly drawn, half an ounce.
Oyl of Violets, three ounces.
Mix them.

From which he had two Stools.

Take of
Speedwel,
Burnet,
Self-heal,

Plan-

Plantain,
Agrimony, of each half a handful.
Whole Barley, half a pugil.

Boyl them in a ſufficient quantity of water, and ſmall Wine, to a Pint, adding to it when it is ſtrained out, two ounces of Hony of Roſes.

Mix them for a cleanſing, and healing Injection.

This Decoction being injected by the Seringe, *Tab.* XXXVII. *Fig.* IV. and Evacuated again, I put the hollow Pipe of Gold. *Tab.* XII. *Fig.* XII. dipped in the Digeſtive into the Wound, and over it the Cerate of Diapalma, and a Linnen Bolſter dipped in Red-wine, and preſſed out. In the mean time the Wound in the Wriſt was not neglected, but dreſſed every other day, and bound up. On the ſixth day, for a bitterneſs in his mouth, I preſcribed this purging Potion.

Take of
Solutive Syrup of Roſes, an ounce and a half.
Extract of Rubarb, one dram.
Diacarthamum, one ſcruple.
Crem. of Tarter, half a Scruple.
Succhory water, as much as ſufficeth.

Mix them for a Potion.

On the ſeventh day I mixt this following Decoction, with this ordinary Drink.

Take of
Speedwel,
Agrimony,
Periwinkle,
Self-heal,
Strawberry Leaves, of each a handful.
The Aſhes of Crevis, one ounce.
Boyl them in a ſufficient quantity of ſmall Wine, to a pint and a half, adding Hony of Roſes ſtrained two ounces.

Mix them.

On the 8*th* day, the Patient, and the Wound on the Wriſt were better, and he made uſe of this Cordial Pouder.

Take of
Chryſolite prepared,
Magiſtery of Pearl,

Red

Red Coral, of each four grains.
Mix them with a convenient quantity of Syrup of Violets, and Syrup of Coral.

The *9th* day the Patient was better, and a little digeſted matter came out of the Wound on the Breaſt; therefore omitting the injection, I put in only the Pipe with the Digeſtive. To the Wound on the Wriſt, inſtead of Diapalma, I applyed the Ceratum Divinum, to Cicatrize it.

On the *10th*, nothing at all came out of the Wound on the Breaſt, but the Patient complained of a cough, which ceaſed upon taking theſe Pectoral Trochies with Musk and Amber.

Take of
The Species Diair, two ſcruples.
Diambra, C.
Pouder of Orris, of each a ſcruple.
Trochies of Gallia Moſchata, two and twenty grains.
Starch, a dram.
White Sugar, an ounce and a half.
White Sugar-Candy,
Penidice, of each ſix drams.
Ambras, Gris. ſix grains.
Mucilage of Gum Tragacanth, made in Roſe Water, as much as ſufficeth, Make them into Troches.

His Urine was ſtill thick, and his making Water painful. On the *11th*, the Patient being in good health, and nothing more coming out of the Cavity of the Breaſt; leſt the Wound ſhould degenerate into a Fiſtula of the Breaſt, omitting the Pipe, I put in a Tent faſtened to a ſtring, covered with the Betony Oyntment, and over it the yellow Cerate.

On the *12th*, *13th*, and *14th*, the Patient complained not, and ſaid he was ſtrong enough to walk without a ſtaff.

On the *15th*, *16th*, and *17th*, the Wound appeared clean and neat, and I put in daily a ſhorter tent, and the fleſh began to grow from within. On the *17th*, the Wound on the Wriſt was Cicatrized, by the help of the Ceratum Divinum.

From the *18th* to the *22d*, the Patient was excellently well; ſo that I took out the Tent, and applyed inſtead of it a Plegit of Lint, covered with Betony Oyntment, and bound up the Wound with a n Spunge dipped in Red-wine, and preſſed out; and with a compreſſing Bandage, called the Breaſt-plate, in the laſt *Table* S.

On the *28th*. I Cicatrized the Wound with the Ceratum Divinum, the

the Patient being reſtored to his former health.

On the 34*th*. he complained of a violent pain on his left-foot, which took its original from the diſturbances of his mind, but his body being purged of bilious humours, it ceaſed.

OBSERVATION XLIII.

Of a Wound on the Breaſt, requiring the Paracenteſis.

IN the Month of *April*, 1622. *Anthony* the Waggoner of *Padoa*, was wounded in the Back, the Sword piercing as far as the right Breaſt, ſo that there was two Wounds: which cauſed him to fall to the ground in a ſwound, looſing his voice, being in a cold ſweat, with an intermitting pulſe, and vomiting of blood: which gave ſuſpition of the Heart, or Stomach being Wounded. I bound up the Wound on both ſides; but firſt I Dilated the Orifice in the Breaſt, with a hooked Knife, *Tab.* XXXVII. *Fig.* V. *E.* and put into both of them a Tent of Hemp-Hards, dipped in the white of an Egg, and faſtned to a String; and omitted nothing that was neceſſary to be done to ſuch Wounds. The Wound being bound up, by reaſon of his great weakneſs, the uſe of Wine was granted him: and yet for a whole day, I could not perceive with my Fingers, any Pulſe of the Arteries in his Wriſt.

The next day, although a great quantity of blood flowed out of the Wound, yet no Pulſe could be perceived, unleſs the Patient turned himſelf from place to place, or from ſide to ſide; the ſame day he took Panada, which he vomited up preſently, from whence I concluded his Stomach to be Wounded.

On the third day the Patient breathed with difficulty, and felt a great pain near to the Diaphragme, on the Wounded ſide, ſcarce a drop came out of the Wound, and what is very much, the Pulſe was very deficient; For this cauſe, between the third and fourth Rib (*Tab.* XXXVII. *Fig.* II. 4) according to *Hippocrates*, the breaſt was opened, to this intent: that the matter contained in the Thorax might be evacuated, leaſt the natural heat ſhould be choaked, and the ſubſtance of the Lungs putrified: the Perforation being made, ſcarce three, or four drops of blood came out of the Wound; which I think is worthy to be noted; becauſe ſay ſome, there will be a great Flux of blood from the Inciſion of the Intercoſtal Veſſels. I do not deny, but that ſometimes, and that in bilious Bodies, ſuch a Flux of blood may fall into the Cavity when the Vein, or Artery is cut; but this may eaſily be avoided with the Incilion-Knife, *Tab.* XI. *Fig.* I. and ſuppoſing the

Inter-

Intercoſtal Vein, or Artery were cut, what matter is it? little, or no blood from a freſh Wound, made between the third and fourth Rib, can be retained within the Cavity of the Thorax; and if it be retained, the next day, when the Wound is dreſſed again it will come out. The Breaſt therefore being opened, a full pound of matter, like to the waſhing of Fleſh came out; which being evacuated, I manifeſtly perceived the Pulſe, and put a Tent into the Wound, covered with the white of an Egg, and the Aſtringent Pouder of *Galen*. In the evening I unbound the artificial Wound, and again took out a pound of blood, mixed with a third part of matter: after that a Tent was put into the Wound, made of Linnen rowled together, and anointed over with this Digeſtive.

Take of
Oyl of St. Johns-wort half an ounce.
Turpentine an ounce.
Hony of Roſes ſtreined half an ounce.
Mix them for a Digeſtive.

And over that a Cerate of Diapalma, Linnen four times doubled, preſſed out of red Wine, and a convenient Bandage.

On the 4*th* I bound up the upper Wound; and drew out of that which I made in his ſide a Glaſs of matter, the fourth part being blood. About the lips of the new Wound, there appeared an inflamation: whereupon I forbad the uſe of Wine, and preſcribed Barly-water for his ordinary Drink. His Pulſe was moſt manifeſt, and from the upper Wounds a purulent matter, in ſome ſmall quantity iſſued out; I therefore preſcribed him this following Syrup, to drink four ounces of it early in the morning, and towards the evening, two hours before Supper,

Take of
French Barly one handful.
Strawberry Leaves,
Leaves of Bugle,
Burnet,
Succory,
Foles-Foot,
Mouſ-Ear,
Horſe-Tail,
Vervain, of each half a handful.
Roots of Madder two ounces.
Liquerice one dram.
Fountain-water four pints.
White-Wine two pints: boyl away half, and in the end of the

the Decoction add Hony ſtreined two ounces.

Mix them for a vulnerary Syrup.

On the 5*th.* day, there came out a Glaſs of quitter ſomwhat ſtinking, rather inclining to yellow, then white: out of both holes of the old Wound there came out a matter, like mouldy Cheeſe (as I have often ſeen in a Peripneumonia) and in ſmall quantity. The lips of the new Wound were black and blew, the Pledgits black, by reaſon of the great impurity of his Body, and the Feaver higher than ordinary.

On the *6th.* day, in the morning, and evening, there came out half a Glaſs of matter, ſo ſtinking, that no body was able to endure the Room, and under the Pledgits, and Bolſters, matter almoſt black, I preſcribed this following Decoction.

Take of

Scordium one handful.

Hony of Roſes ſtreined one pound.

Common Water ſix pounds.

Boyl away the third part, and let a pint of it ſtreined out, be caſt in through a Seringe. *Tab.* XIII. *Fig.* II. after the injection, I put in a Tent, dipped in the former Digeſtive. If a ſilver Probe be put into the Quitter, and being drawn out, according to *Hippocrates*, appeareth black, the Patient will hardly eſcape: in imitation of *Hippocrates* I laid a Probe in the Quitter; and ſeeing it had contracted no blackneſs, but remained very white, I hoped well of his recovery.

The 7*th.* day, the Patient had a higher Feaver, then the days before, and the Quitter came out in a greater quantity, but not ſmelling ſo ill, as upon the 5*th.* and *6th.*

On the 8*th.* the lips of the Wound, made between the third and fourth Ribs inflamed. Upon which the Patient ſuffered greater pain, and a higher Feaver.

On the 9*th.* day, the ſtinking of the Purulent matter did evidently abate, but in the evening there appeared about the new Wound, St. *Anthonies* Fire, the hole being larger, and the third Rib bare.

On the 10*th.* the artificial Wound appeared larger than the day before. The cauſe of which Dilatation, in my judgement, was the bilious humour, which corroded the fleſhy ſubſtance with its Acrimony; in the night he felt great pains about the Baſter'd Ribs, by reaſon of the Ereſypelas, and the Intercoſtal Nerve inſerted into the deſcending Muſcle of the Belly.

On the 11*th.* day he was better, and ſlept all night: he would not admit of the Siphon, by reaſon of the ſoreneſs of the Pleura, or Membrane, ſtretched under the Ribs.

On the 12*th.* He felt as great pain as the day before, therefore omit-

omitting the Tent, I applyed a piece of Spunge, preſſed out of the Vulnerary Decoction, in the night he ſweat twice, all over his Body.

On the 13. He was better, and white Quitter came out. In theſe caſes, there is no better remedy, then not to purge the Body: for if any Purge be given, all the humours flow to the Guts; the Body is extenuated, and many bad Symptoms happen upon it.

On the 14*th*. He ſlept well, and the matter came out of the Wound in a ſmall quantity. In the evening there came more away, and the Pulſe ſeemed greater than ordinary.

On the 15*th*. His Feaver was higher then the day before; becauſe the Patient had reſted on his left-ſide, which was ſound, and not on his right-ſide, which was Wounded: ſo that the matter contained in the Thorax encreaſed the Feaver. In the evening a Tent was put into the Wound in his ſide, becauſe the Fleſh grew too faſt.

On the 16*th*. For a bitterneſs he felt in his mouth, three or four days together, he took Rubarb, and voided four times bilious excrements, after which he was better.

On the 17*th*. I gave him the ordinary Decoction, in the evening white Quitter came out, in a very ſmall quantity. Whereupon the Decoction was not injected with the Seringe: his Cough left him, he ſlept well in the night, but the Feaver was ſomwhat higher than the day before.

On the 18*th*. I neither injected the Decoction, nor put a Tent into the Wound, but only Pledgits, with Betony Oyntment, and over it the Ceratum Barbarum. The Quitter inclined rather to green than white: he ſlept in the night, but quarrelled in his ſleep, a ſign of the abundance of bad humours in the Body.

On the 19. He ſweat all the night, the Quitter was ſomwhat green ſtill: four hours before Dinner, he took an ounce and a half of Caſſia newly extracted, diſſolved in Broth, in which Succory, Borage, Burnet, and Speedwell, were boyled, which Purged him thrice, the excrements being very bilious,

On the 20*th*. Half an ounce of Quitter came out. A Pipe of Tin was put into the Wound, made by Art, it being Dilated by the Tent, with a Spunge preſſed out of Red Wine. The 20*th*. He could not ſleep all the night, becauſe the Pipe preſſed upon the Ribs, and Membrane.

On the 21*ſt*, nothing came out of the Wound, yet the Pipe was put in as the day before. Then he took the Caſſia diſſolved in the former Broth, with pouder of Rubarb, black Mechoacan, and Crem of Tarter: he drunk no longer of the Vulnerary Decoction, but of broth made with ſome Herbs, as Succory, Borage, Sowthiſtle, Strawberry Leaves, and Peruinckle, the Wound in the Breaſt was healed up.

On

On the 22*d*, he took the ſame Broth again. On the 23*d*, the Vulnerary Decoction was once again Injected, and a little quitter came out; which, becauſe it was ſomewhat green, the Patient took the Purging Pouder again.

On the 26*th*, 27*th*, 28*th*, I did not Inject the Vulnerary Decoction, and bound up the Wound once a day; after two days the Fever decreaſed.

On the 29*th*, the Patient took his Broth, the quitter white, and the Patient almoſt out of danger.

On the 36*th*, when I looked again upon the Wound, a great quantity of matter flowed out, and the Lips were ſwelled; a ſign that he had committed ſome error in his Diet; and being asked, he confeſſed he had eaten of ſome Milk-diſhes which were forbidden: from which, he abſtained after that, and was in a ſhort time very happily reſtored.

OBSERVATION XLIV.

Of a Fiſtula in the Breaſt, Perforated with a Needle.

IN the Year 1630. an Officer of the Emperours being deſperately Wounded, three fingers breadth below the right Clavicle, and almoſt cured at the ſign of the Plough in *Ulme*; upon ſome error committed in his Diet, was troubled with an Inflammation, which ſuppurated, and degenerated into a large hollowneſs under the skin: the bottome of which, deſcended as low as the eighth Rib; ſo that neither the Chyrurgion, nor the Phyſitian could purge the matter out of this hollowneſs, unleſs they daily ſet the Patient upon his head, with his heells upward: but ſeeing that the Conſolidating of this hollowneſs was delayed, and the Patient much diſturbed every day, by the turning up his body, he commanded me to be ſent for, being recommended to him by the Hoſt of the Houſe. Coming to him, and perceiving what it was I propoſed the cutting open the hollowneſs, which uſeth to ſucceed very happily, being performed with the Scolopomachærion; but this Operation not being permitted; I thought of a way, whereby, without laying open the hollowneſs, the matter might find a paſſage: therefore the Orifice being Dilated with Gentian, I put in an Inſtrument, *Tab.* XIV. *Fig.* V. to the ſharp end of which, a little ball of Wax was faſtened, and without the Patients knowledg, (for he thought I was only ſearching the quality

lity of the hollowneſs.) I preſently perforated the bottome, and drew out the Needle. The matter being evacuated by the paſſage opened, I put a Tent into the lower Wound, beſmeared over with a whole Egg; and to the upper, one dipped in Betony Oyntment, and putting on a Diapalma Plaſter, and Linnen four times doubled, I bound up the whole breaſt with the Bandage of *Soſtratus*, and afterwards kept open the Wound for ſome days, with a ſharp hollow Tent made out of Linnen, covered over with the wax, till I conſolidated the upper with the Ceratum Divinum, and cleanſed the ſides of the hollowneſs with Water and Honey, applying a new Spung preſſed out of Red-wine, and with the Bandage that *Galen* calls the Breaſt-plate, in the laſt *Table* S. being ſtraitly bound, it conglutinated, the hollowneſs growing together. I every day diminiſhed the hollow Tent, and at laſt Cicatrized the Ulcer. This Operation doth beſt ſucceed when the hollowneſs hath not contracted any Callus, otherwiſe it doth not anſwer our deſires.

OBSERVATION XLV.

Of an Empyema in the Breaſt, Cured by opening it.

IN the Year 1645. *Nicholas Rohler*, Waterman and Citizen of *Ulme*, was wounded with a Bakers Knife upon his back, between the 4*th*, and 5*th* Rib, reckoning from above, and his Lungs hurt; ſo that the Patient preſently, beſides ſpitting of bloud, complained of a great difficulty of breathing, being ſent for the firſt hour that he was hurt, I injected with the Seryinge an Aſtringent mixture into the Cavity of the Thorax, and kept the Wound open with a Tent; for preſerving his ſtrength, and ſtopping the bloud. I preſcribed an Electuary, (whoſe Ingredients may be ſeen in Obſervation 41.) and a ſlender Dyet. At my going away, I declared to the ſtanders by, that the Patient would certainly die, unleſs there were very ſuddenly a new Wound made below the other, but they would not permit it. In the morning I propoſed to the Patient, the Paracenteſis of *Hippocrates*, who preſently conſented to it; and by that means, not neglecting other Remedies, he was very happily recovered, and hath lived divers years ſince in very good health.

OBSERVATION XLVI.

IN the Year 1631. *Valentine Dettelbacher*, a Baker of *Ulme*, at the Sun Inn, thruſt a Knife into his own Breaſt, a little below the left Pap, but without hurting the Parts contained within. Whereupon I put in a Tent, covered over with the common Aſtringent, and Linnen dipped in black rough Wine, and preſſed out, and bound it up with the Bandage of *Soſtratus*. Which being done, I gave him a Laxative Gliſter, and ordered blood to be taken from his right Arm. Afterwards, the matter beeing evacuated, partly by the Wound, and partly by Urine; I conſolidated the Wound, by the help of inward, and outward Remedies formerly mentioned; as Injections, Oyntments, Emulſions, and Vulnerary Decoctions.

OBSERVATION XLVII.

Of a Wound on the Breaſt, penetrating through the Midriff into the bottom of the Stomach.

ON the 12*th.* of *Auguſt*, 1645. *Melchior Frick* a Fuller of *Ulme*, was Wounded by a certain Gardiner, not only in the Head, and Noſe, of the Cure of which ſee, *Tab.* XXXII, and *Obſervation* XXII. But alſo in the Breaſt, five Fingers breadth below the left Pap. The Wound on the Head, and Noſe, *Elias Walther* a Chyrurgion, did preſently bind up with Aſtringents, And perceiving a third Wound on the Breaſt, he ordered them to ſend for me; being come, and about to ſearch the Wound made upon the Breaſt, I could by no means get into the Cavity of the Thorax: For the Wound was cloſed up, by reaſon that the Scituation of the Muſcles was changed, which were Wounded. While I was ſearching the Wound, he Vomited up a great quantity of blood, and fainted away: ſo that he ſeemed rather to ſtand in need of Divine, than Humane aſſiſtance. This Vomiting did indicate to me, that the Stomach was Wounded; and conſequently the fleſhy part of the Diaphragme, and

that the Breaſt was Perforated. Whereupon making known the danger to the ſtanders by, I put a Tent into the Wound, with the uſual Aſtringent, and applyed the ſimple Liniment. I bound up the Thorax with the Bandage of *Soſtratus*, *Tab.* XXXVIII. *Fig.* VI.. On the ſecond day, at five in the morning, the Patient Vomited again two meaſures of blood mixed with Wine; and after that, all that he had taken down. It was therefore demanded (ſeeing that the Wound of the Noſe did not Penetrate into the Noſtrils, ſo that the blood might run down through the Palate to the Throat, and into the Stomach.) from whence that Vomiting of the blood and meat, ſhould proceed. To which I anſwered, that although the Wound being cloſed did not admit of any paſſage into the Breaſt, diſcoverable by the Probe; and that although there was no apparent Wound in the Belly, yet thoſe Symptoms which hapned upon the Wounding of the Breaſt, did ſufficiently prove, that the Sword did Penetrate into the Stomach through the Intercoſtal Muſcles, and the fleſhy part of the Midriff (and if the Nervous part had been Wounded, greater Symptoms would have afflicted the Patient.) That the Pleura was Perforated, was evident from the Flux of blood inward into the hollow part of the Breaſt, and from the cleanneſs of his Shirt: for if the Breaſt had not been Perforated, he would without doubt, have bled outwardly, which muſt have tinctured his Shirt of a very red colour: neither doth it make any thing againſt this Conjecture, that the Patient never complained of any ſtreightneſs of his Breaſt, or cough: for the blood which might cauſe Symptoms, paſſed through the Wound of the Midriff, into the Cavity of the Belly, where being digeſted, it ſtrove to find a paſſage by ſiege. The Wound of the Stomach was indicated, by the Vomiting of blood, and what was taken down by the loſs of Appetite, and pain about that Region. For theſe reaſons I took greateſt care of the Stomach, not neglecting the other Wounds, and gave him often in ſmall quantity Conſolidating Drink, and Medicines; leaſt by too great a quantity his Stomach might be diſtended, and Vomiting provoked. I kept up his ſtrength, with two Glifters every day, made of fat fleſh Broth, and the yolk of an Egg; his Drink was Pomgranate-Wine, and his Medicine, old conſerve of Roſes, mixed with Powder of Maſtick.

Take of
Old Conſerve of red Roſes four ounces.
Choice Maſtick in fine Pouder half an ounce.
Syrup of Comfrey as much as ſufficeth.
Make them up into an Electuary.

Of which he took the quantity of a Walnut, morning, and even-

ing. I anolated the outward region of the Stomach, with Aſtringent Oyls.

Take of
Oyl of Roſes,
Oyl of Maſtick,
Oyl of Quinces, of each half an ounce.
Oyl of Worm-wood three drams.
Mix them.

And cured the Wound in the Breaſt as a ſimple Wound.
On the 7*th*. day, the Patient had a ſtool of Purulent matter.
On the 8*th*. the Wound on the Breaſt was conſolidated.
On the 14*th*. and afterwards the Patient drank Conſolidating Liquors, and kept them without paln.

OBSERVATION XLVIII.

Of a Fiſtula in the Breaſt, Cured by Corroſives.

IN the Year 1643. *John Jacob Welf*, a young man of *Heilbrun*, had a hard Swelling on the right ſide of his Breaſt; which coming to ſuppuration, and being ill cured, degenerated into a Fiſtula, which the Chyrurgions of *Heilbrun* left as deſperate. The Patient coming to *Ulme*, deſired my adviſe and help, which I promiſed: and after Generals, for diſcovering of the quality of the Fiſtula, I dilated the narrow Orifice with the Pith of Elder ſtrongly wreathed, till it would admit of the round Probe; *Tab*. VIII. *Fig*. VI. wherewith I felt the Bone rough. To conſume the hardneſs of the Fiſtula, I put in a Style, dipped in this following Oyntment.

Take of
Henbane-ſeeds poudered one ſcruple.
Burnt Alum,
Burnt Vitriol, of each half a dram.
Butter waſhed in Plantain-water, as much as ſufficeth.
Mix and make them into an Oyntment.

The Callus being extirpated, I put a Tent into the Fiſtula: the top of which, being moyſtned in the Decoctum Divinum, I ſprinkled

over with Euphorbium poudered: the reſt of it I covered with this Oyntment.

Take of

Betony Oyntment one ounce.

Ægyntiacum half an ounce.

Mix,

And make them into an Oyntment, hindring the breeding of any Callous ſubſtance. After two months the Rib threw off Scales, which being taken out, I diminiſhed the Tent every day dipped only in Betony Oyntment, till the Ulcer being incarnated, it was requiſite to Cicatrize it with the Ceratum Divinum; with theſe outward Medicines, and a purging Wine, the Patient recovered his former health, and left *Ulme*.

OBSERVATION XLIX.

Of a Wound on the Breaſt Dilated with the Knife.

ON the 22*th*. of *November*, *John George Coſtnitzer* a Cloak-bag-maker of *Ulme* received a Wound on the left-ſide of his Breaſt, between the ſixth and ſeventh Rib, without hurting of the inward parts, but ſo narrow that a Tent could not be put in. Being ſent for, I preſently Dilated the Wound with a Knife, *Tab.* XII. *Fig* I. or *Tab.* XXXVII. *Fig.* V. *E.* whereby blood ſlipped into the Cavity, and cauſing the ſtreightneſs of the Breaſt may be conveniently evacuated: as much blood being evacuated as his ſtrength would bear, I put a Tent into the Wound, made of raw Flax, dipped in a Medicine, to ſtop the blood, and faſtned to a long Thread: after a laxative Gliſter, a Chyrurgion took away blood from him, out of the Median Vein of the left arm. The following days, morning, and evening, I unbound the Wound; and letting out a convenient quantity of blood, I put in a Tent, dipped in the former Digeſtive: till all being evacuated, the Wound digeſted good matter. Afterwards I put in a little hollow Pipe, made of Linnen, covered over with Wax, and anointed with a Sarcotick, which I made every day leſſer, and ſhorter, than other, till the Wound being filled up with Fleſh, it was fit to be Cicatrized with the Ceratum Divinum.

OBSER-

OBSERVATION L.

Of another Wound on the Breaſt, Dilated with the Knife.

ON the 5*th.* of *December*, *Adam N.* a Barber, came to me, and told me, that the moſt Reverend Mr. *Snitzer*, Pariſh Prieſt, in the Vilage of *Eingen*; the day before, about Supper-time, had been Wounded by a Souldier of the Emperors, with two Wounds; of which, one was on the right-ſide of the lower Jaw: the other on the Back, near the Back-bone, between the third and fourth Rib, (in that place in which *Hippocrates* uſed to make, the Paracenteſis) of the right-ſide, Penetrating into the Cavity, as far as the uppermoſt Rib of the ſame ſide, a little lower, than where the Clavicle is connected to the top of the Sternon, Wounding the Lungs, and the intercoſtal Veſſels. Upon which, theſe Symptoms followed, great faintneſs, difficulty of breathing, cold ſweats, and very great pains about the Breaſt. The wound in the Back, a Barber dreſſed with a Tent, dipped in the white of an Egg. putting in only an Ear-Spoon, between the fleſhy Membrane and the Muſcle; and applying the Stictick Plaſter of *Crollius*. The Wound in the lower Jaw was ſimple, but the difficulty of breathing was very troubleſome; and the pains very great on the Breaſt, both before, and behind; by reaſon that the intercoſtal Veſſels were Wounded. I ſearched the Wound which was narrow, with a blunt Probe, and went into the cavity of the Thorax: a ſign there was great quantity of blood collected therein.

Whereupon I preſently caſt in this following mixture, with a Syringe, into the Cavity of the Breaſt, to ſtop the blood.

Take of
The Aſtringent Pouder of *Galen* one dram.
Chryſolite prepared one ſcruple.
Four whites of Eggs.
Plantain-water, as much as ſufficeth.
Mix them for an injection.

And put a Tent into the Wound, to keep it open, done over with a thick Aſtringent; and over it applyed Linnen preſſed out in Red Wine, and the Bandage of *Soſtratus*, *Tab.* XXXVIII. *Fig.* VI. to keep in the Tent, and hinder inflamation.

For the ſtopping the blood, and keeping up his ſtrength, I this Confection.

Take of
Conſerve of Comfrey ſix drams.
Old Conſerve of Roſes one ounce.
Trochies of Sealed Earth.
Trochies, of Amber, of each a ſcruple.
Bole-Armenick prepared, two ſcruples.
Prepared Pearl half a ſcruple.
Tablets of Sugar of Roſes, and
Syrup of Pomgranates, as much as ſufficeth.
Mix them, and let the Patient take often of it in a day.

For his thirſt I preſcribed a cooling, and Aſtringent Julep.

Take of
Syrup of Pomgranates,
Syrup of Myrtles, of each an ounce and half.
Speedwel-water,
Plantain-water,
Self-heal-water,
Succory-water, of each three ounces.
The Species of Diamargariton Frigidum half a dram.
Mix them.

In the Afternoon, he took ſome Grains of the *Opiate Laudanum*, with the Magiſteries; which cauſed him to ſleep four hours quietly. On the third, the Patient took for a pain in his Belly this Anodine, and Laxative Gliſter.

Take of
The Roots of Marſh-mallows,
Setfoyl, of each half an ounce.
The Leaves of Mallows,
Agrimony,
Speedwel,
Violets,
Flowers of Camomile, of each an hand
Seeds of Flax,
Fenugreek, of each four drams.
Annis,
Fennil, of each a dram and half,
Raiſons half an ounce,

Boyl them in a convenient quantity of Fountain water to ten ounces, add to it being streyned out, Solutive hony of Roses three ounces,

Oyl of Violets two drams and a half.
Mix them, for a Glister.

With this he voyded twice bilious and serous matter. After the giving away of the Glyster, the liver vein was opened on that side he was hurt, and four ounces of blood taken away. At 3. of the Clock in the Afternoon, I took out the tent, but nothing came out by reason of the narrowness of the wound, which I dilated with the incision knife, *Tab.* XXXVII. *Fig.* V. So that the matter collected in the Thorax found a free passage. After the dilating the wound a pint of blood flowed out, so hot, that it burnt the Patient more a coming out, than if it had been a lighted Candle. A pint of blood being taken out; I injected in a mixture to stop the bleeding veins, and arterys: and put into the Wound a tent, tyed to a thread; and covered over with a convenient Medicine; for mitigating the pain of his breast I ordered this oyntment.

Take of
The Pectoral Oyntment, one ounce.
Oyl of sweet Almonds.
Oyl of Camomile.
Oyl of Earth-worms of each a dram and half.
Mix them.

On the 4th. day. By reason of the bloud contained in the Thorax the Feaver was greater than the days before; Loosening the bandage of *Sasiatus*; and taking out the tent, a pint of blood came out; and at seven of the Clock at night, a pint and a half more, about ten at night, he took this following Emulsion, upon which he slept again three hours.

Take of
Melon seeds, one ounce.
Lettice seeds,
White poppy seeds, of each a scruple.
Strawberry water,
Burnet water.
Speedwell water, of each four ounces.

Make an Emulsion, to which add half a dram of the Species of Diamargariton Frigidum, and two ounces of Syrup of Violets.

Mix them for two doſes.

For his difficulty of breathing, and pain of the breaſt (which was cauſed by the great loſs of Blood) he often took a ſpoonful of this following mixture.

℞ Take of
- Speedwel water, three ounces.
- Burnet water,
- Succory Water
- Plantain water.
- Black-Cherry water, of each half an ounce.
- Bezoar ſtone, eight grains.
- Lapis Hæmatitis or blood-ſtone, half a ſcruple
- Sealed earth, one Scruple
- Red Corall.
- Magiſtery of Pearl, of each half a ſcruple.
- Pearl tablets half an ounce.

Mix them, and put them into a glaſs.

On the 5*th* day, the wound being unbound a pint and a half of blood flowed out again, his breathing was more free than the days before: therefore I preſcribed this vulnerary Decoction.

℞ Take of-
- Whole barly half a pugill,
- The leaves of Strawberies.
- Peruinkle.
- Bugle.
- Burnet.
- Speedwell.
- Succory.
- Folesfoot.
- Mouſe-ear.
- Vervain.
- Horſe-tail, of each half a handful.
- Madder roots.
- Tormentill rootes, of each half an ounce.
- Liquorice, a dram.
- Fountain water ſix pints.
- White-wine two pints.

Boyl them half away, and in the end, add to ounces and a half of hony of Roſes ſtreyned. Streyn it out, and take four ounces every morning, at ſeven of the Clock, and three ounces at four in the After-noon;

noon; his drink was Barly water boyled with the Vulnerary herbs. On the *7th.* he was ſomwhat better and a pint of blood flowed out. In the evening for a pain about his navel, the Glyſter above deſcribed was injected, I covered over the tent to be put into the Wound, with this digeſtive,

Take of
Turpentine waſhed in Plantain Water a dram and a half.
Oyl of earth Worms one dram,
The yolk of an Egge.
Mix them, into the form of a Liniment.

On the *7th.* day, his pulſe was equal and both in the Morning, and Afternoon, nine ounces of Matter and bloud mixed together, came out.

On the *8th.* day, a Pint of pure Matter came away: the Patient complained of a Cough, for which I precribed this Lohoch.

Take of,
The Lohoch of Fox Lungs.
The ſound, and well experimented Lohoch of each ſix drams.
Syrup of Folesfoot
Syrup of Red Roſes, and
Syrup of ſpeedwell, of each an ounce.
Syrup of Hyſop, half an ounce.
Pouder of Hyſop, an ounce and an half.
Flower of Brimſtone, two ſcuples.
Trochies of Spodium, half a dram.
Mix them, to be taken with a Liquoriſh ſtick.

In the mean time for the ſtinking of the matter, Injections of the decoction of Scordium, Barly, and hony of Roſes Streyned, were not neglected, On the *10th* a Pint of digeſted matter came out of the cavity of the Breaſt, and the Patient was better than the day before. On the *11th.* half a Pint of very good digeſted matter came out of the Wound. with ſome pieces of the lungs, in which ſome branches of the Aſpera Arteria were diſtinctly to be ſeen.

On the *12th.* and *13th.* The matter which came out was digeſted, the Patent for a Cough, and bitterneſs in his mouth, took this following Bolus two hours before Dinner.

Take of
Caſſia newly drawn one ounce.
Speciers Diamargariton Frig. half a Scruple.

Tro-

Troches of Agarick two Scruples.
Rubarb one dram.
Make it into a Bolus with Sugar.

This gave him three or four ſtooles. On the 14th. He was better than the days before. On the 15th. Four ounces of ſtinking matter flowed out; and therefore, I waſhed the Cavity of the Thorax with the former injection. On the 16th. It came out in a leſſer quantity, and the ſtink was not ſo great. On the 17th. The Urine ceaſed to be bilious, the Patient complaining of a Cough I ordered him this Lenitive.

Take of
Comfry roots boyled, bruiſed, and paſſed through a ſive; two ounces,
The Species of Diatragacanthum Frigidum,
Juice of Liquorice,
Penidice of each four drams,
Syrup of Liquorice,
Syrup of Violets of each as much as ſufficeth,

Mix them. On the 18th. The Cough and ſtink abated, ſo that the injection came out unaltred. On the 19th. The Patient was better, the Urine alſo was good. On the 30th. The Patient complained of a pain of the wound, and looking into it, I found the pipe thruſt out, by very good fleſh; for that reaſon therefore and becauſe there came out no more matter, I removed the pipe and put in a tent dipped in Betony Oyntment, and injected twice a day of the following decoction to conſolidate and ſtrengthen the inward parts.

Take of
Whole Barly half a
Comfry roots,
Setfoil roots of each
Of theſe herbs,
Speedwell,
Burnet,
Mouſe-ear,
Ladies-mantle,
Saracens Conſound,
Bugle,
Vervain,
Horſetail,
Peruincle,
Strawberries,

Scordium of each half a handfull.
The seeds of Succory half an ounce.
Fountain-water six pints.
White-wine one pint.
Boyl away a third part, and in the end add.
Hony of Roses streined, an ounce and half.
Mix them for an injection.

On the 26th. The wound was consolidated, and the patient recovered to his former health, went abroad.

OBSERVATION LI.

Of the happy Cure of an Empyema, by Dissection.

ON St. *John Baptists* day the 24th. of *June*, 1638. At seven in the evening, Captain *Masclique* having Drunk hard, was Wounded in a Duel, by Mr. *Green*, a Commissary, upon the right Pectoral Muscle, two Fingers breadth below the Clavicle. The Wound Penetrating (through the Cephalick and Breast-vein) into the Cavity of the Thorax, with great loss of blood, Swoundings, Convulsions, Snorting, cold Sweats, no Pulse; and that particular Convulsion of the Muscles on both sides of the Mouth, called the *Sardonian Laughter*; and so he lay for above half an hour, without sense, or motion. In which dangerous Case, by reason of the forementioned Symptoms, I could do no less, than tell his dear Wife and Daughter, that these were the forerunners of death. And the 9th. Aphorism of the seventh Section of *Hippocrates* came into my mind, loss of the understanding, or Convulsions after bleeding are dangerous: yet I ordered these remedies.

Take of
Black-Cherry-water four ounces.
The Anhalt Cephalick Spirit one dram.
Bezoar Stone one scruple.
Red Corral prepared half a dram.
Crysolite prepared one scruple.
Pearl Sugar half an ounce
Mix them.

For Revulsion sake, I caused a sharp Suppository to be put up, and ap-

applyed to the Noſtrils and Pulſe, the ſweet ſmelling Waters of Bacchus, and Rue Vinegar. I bound up the Wound with a Tent of fine Flax dipped in the white of an Egg, and ſprinkled over with the Aſtringent Pouder, and Linnen preſſed out in Red Wine, and the Bandage for the Clavicle; and being ſo bound up, he paſſed the whole night quietly, and ſlept out his Drunkenneſs. The next day for a ſtreightneſs on the right ſide, and pain about the Region of the Diaphragme, the Median Vein on the ſame ſide was opened, and four ounces of blood let out: in the evening for a ſharpneſs of Urine, he took half this Emulſion.

Take of
Melon-ſeeds an ounce.
Burnet-water,
Strawberry-water,
Speedwel-water, of each two ounces and a half.
Black-Cherry-water two ounces.
Red Corral prepared half a dram.
Pearl prepared a ſcruple and a half.
Chryſolite prepared ten Grains.
Sugar-candy, and
Syrup of Violets, of each an ounce.
Mix them for an Emulſion.

I put a Tent into the Wound, covered with a Digeſtive, which was made of the yolk of an Egg, and Turpentine waſhed in Roſe-water, ſprinkled over with prepared Cryſolite, and over that a Bolſter, preſſed out hot in Red Wine, and the Bandage of *Galen*. On the third day he took this following Gliſter.

Take of
The Leaves of Mallows,
Violets,
Pelitory of the Wall,
Speedwel,
Flowers of Camomile,
Mallows, of each half a handful.
Flax-ſeed half an ounce.
Melon-ſeeds,
Citron-ſeeds of each three drams.

Boyl them in a ſufficient quantity of Water to eight ounces; and add to it being ſtreined out,
Hony of Violets two ounces,

Leni-

Lenitive Electuary one ounce.
Oyl of Violets,
Oyl of Camomile, of each an ounce and half.
Mix them for a Gliſter.

From this he had four ſtools. I dreſſed the Wound, by reaſon of a Flux of blood, with prepared Chryſolite, and the Aſtringent Pouder of *Galen*, in the white of an Egg, by reaſon of faintneſs, the Patient took often in a day, a few Grains of the Confection of Alkermes, which did relieve him.

In the evening after the taking of his Emulſion, he complained of heat of Urine, and looking upon it in a Glaſs, I found Purulent matter at the bottom. The pain and heavineſs about the Liver, and Midriff, ceaſed, and he ſlept quietly all the night. On the 4*th*. The Feaver abating, and the matter in the Cavity of the Thorax tending towards the Paſſages of Urine, I thought it expedient to preſcribe this Vulnerary Decoction.

Take of
The Aſhes of Crevis a handful and a half.
Burnet,
Peruinkle,
Speedwel, of each two handfuls.
Strawberry-water one Pint.
Small Wine ſeven Pints.

Boyl away the third part, and add in the end two ounces of Hony of Roſes ſtreined.

This Decoction was mixed morning and evening, with the Emulſion; which did wonderfully derive the blood in the hollow part of the Breaſt, to the Paſſages of Urine. Out of the Wound there flowed clotted blood; and I injected into the Cavity of the Breaſt with a Syringe, the Aſtringent and healing Decoction, deſcirbed in the 50*th*. Obſervation.

Then I put into the Wound, a Pipe made of Linnen, and yellow Wax; and over it the Cerate of Diapalma, and a Spunge filled with Red Wine, preſſed out, and the Bandage. On the 5*th*. and 6*th*. The Patient was better again; But on the 7*th*. he ſlept not, and complained of a pain of the Wound, and of all that ſide, looking upon the Wound, the Pipe, or hollow Tent made of waxed Linnen, was out of the Wound: ſo that the matter contained in the Breaſt, cauſed pain, and found no paſſage; but the matter being evacuated, the pain decreaſed The Patient complained of a bitterneſs in his Mouth: for which I preſcribed this Syrup.

Take

Take of
The beſt Manna an ounce and half.
Extract of Rubarb one dram.
Crem of Tartar two ſcruples.
Speedwel-water, as much as ſufficeth;
Mix them into a Liquid Syrup.

With this he voided thrice bilious matter: in the evening, when the pains about the Wound, the Liver, and Midriff, remitted; we look't upon, and felt the lower Belly, which was diſtended with Wind; and therefore he made uſe of the former Gliſter, which agreed well with him, and he ſlept the whole night accordingly. On the 8th. The Urine was troubled, and like to that, of thoſe who have Catarrs: from whence it ſeemed that the pain the day before, took its original from the Head, rather than from the Wound. On the 9th. He uſed the Emulſion, with the Vulnerary Decoction: the Wound was dreſſed as the days before; only that the Tent was covered with the former Digeſtive, ſprinkled over with the Pouder of Aloe, Frankincenſe, and Chryſolite, a Vulnerary Decoction, being firſt injected. On the 10th. 11th. 12th. and 13th. He went on very well. On the 15th. His Urine was clear, and he reſted well all the night: good white matter came out of the Wound; and therefore I drew out the Pipe, or Tent, made of waxed Linnen, dreſſed it with Betony Oyntment, and put in again. On the 16th. He roſe up, and walked about a little, and ſome white digeſted matter came out of the Wound. In the evening he made uſe of a Vulnerary Decoction, and an Emulſion of Melon-ſeeds. On the 17th. and 18th. He went on well, and little or no matter came out of the Wound: Therefore I took out the Tent, and applied Lint, and the Cerate of Diapalma, and a new Spunge preſſed out in Red Wine. On the 20th. and 21ſt. I Cicatrized the Wound.

OBSER-

OBSERVATION LII.

Of an Ulcerated Cancer, of the Breast cut off with the Knife.

THE most Religious Lady, *Anna Sibylla*, Abbess, of Unspring, about 47. years of Age, of a hot, and somwhat dry temperament, five years since began to be troubled with a suppression of those, upon which there arose, a hard black painful swelling upon her left Breast; so that she was forced to desire the help of a Barber; whonot understanding the cause, endeavoured to dissolve the hardness with moistning and softning medicines; by which means he was so farr from doing her any good, that he rather præcipitated the miserable Lady into a greater calamity; and *Sennertus* affirms that a Cancer by Emollients is exasperated. And seeing the tumour gave not way, The Barber proposed the cutting of it out; and while he was cutting, seeing the blood flow out of the breast, he ran away more fearful than a hare, and left the Abbess all bloody and almost dead; so that the sisters of the monastery, were forced to stop the blood as well as they could, and keep up her Spirits with Cordiall waters. Upon this incision the whole breast began to be ulcerated and to swell into a prodigious bigness; with a smell as if vinigar and flesh were mingled together, by reason of the nearness to her heart; her feaver was high, her pain extreme; which she could not suffer any longer, but came to *Soffing*, and sent for me, and the most eminent Dr. *Johannes Regulus Velliger*, my most honoured relation, and desired our advice, and help. Upon our first visit and looking upon it; from the smell, the humour, and orginal, we judged it to be a Cancer, and that it could not be otherwise cured, than by cutting off the whole breast. And gave the Abbess notice of it, encouraging her to sustain it resolutely, hoping for a certain cure (seeing that it had not taken too deep root; and the time of having her terme was now past with her.)

Upon her consenting to it I washed the ulcerated breast with the divine Decoction, by reason of its great stinking, putrefaction, and pain; ond sprinkled upon it a pouder made of burnt Alume, prepared Tury, Chrystolite, and Scordium, and over it the Ceratum [illegible] with the simple liniment.

Take

Take of
The ceratum Oxelæum
Linimentum ſimplex, of each an ounce.
Oyl of Myrtles two drams.
Mix them, in a leaden morter.

The deſcription of the Linimentum ſimplex.

Take of
The juice of Nightſhade newly preſſed out.
Oyl of Roſes, of each twenty ounces.
Boyl them according to Art till the juice be Boyled away, and add to it ſtreyned out, Litharge of Gold.
Ceruſs, of each a pound.
Mix them, according to Art into the form of a Liniment.

The Cerate of Oxelæum is thus prepared.

Take of
Common old Oyl one pound.
Sharp Wine Vinegar,
Litharge of Gold, of each half a pound.
Mix them upon a gentle Fire, till they come to the conſiſtence of a Cerate

We preſcribed a Laxative Wine of ingredients, to bring away Water, and Gall: with which at ſeveral times, the bad humours were Purged out. Then the Median Vein was opened in her left Arm, and a ſmall quantity of blood taken out, that we might ſee of what quality, or conſiſtence it was; which we found watery, and half putrified, without a due concretion of Fibres; and therefore ſhe made uſe of an Electuary of Trochles of Vipers.

Take of
Conſerve of Borage an ounce and half.
Trochies of Vipers half an ounce.
Syrup of Corral as much as ſufficeth
Mix them.

So that the ſerous and malignant matter being brought from the Center to the circumference, the Patient grew better upon the diligent uſe of theſe remedies; and the ill ſmell and corruption ceaſed. Her Body being thus prepared and Purged; the Lady Abbeſs did earneſtly deſire her Breaſt might be cut off; and leaſt that by any longer delay, the Ulcer might ſpread inwardly. Upon the 25*th.* of *June*, 1641. I prepared all things neceſſary for the Operation, and the

the next day appointed it to be cut off: giving the Patient a draught of Cordial Waters, Cinamon, and Alkermes, we went about the work; and although in cutting off the whole Breaſt, a long ſharp two-edged Needle ſhould be made uſe of, carrying two Threads, to be paſſed through the bottom of the Breaſt; and then the Threads on both ſides to be tyed ſtrongly together: and if that be not ſufficient, another Needle to be paſſed through, and the Threads tyed in the like manner, as is plain to be ſeen in, *Tab.* XXXIIX. *Fig.* I. Yet to avoid this great pain which ariſeth from this double paſſing of the Needle; and underſtanding the Anatomy of the Part. I invented a new Ligature with divers heads: with which, without the paſſing of the Needles, having marked out the circumference of the Tumour with Ink, at once drawing (leaſt that might happen to me, which afterwards in the 54*th.* Obſervation you will hear hapned to the Cutter for the Stone) I took off the Breaſt, with a very ſharp Knife, from the Pectoral Muſcle, Root and all: and did not preſently ſtop the blood; but after that all the black and burnt blood, had flowed out of the Neighbouring Veins, and Arteries: only to ſtrengthen the Part, I lightly touched it with a red-hot Iron; and then applyed the Aſtringent Pouder of *Galen*, and prepared Chryſolite, made up with the white of an Egg ſhaked together, and ſpread upon Lint, and the Bandage which *Galen*, and other *Greek* Authors, Name the Cataphracta, or Breaſt-plate. On the 27*th.* of *June*, the blood being ſtopped, I did not apply any Digeſtive, by reaſon of the moiſtneſs of the Part, but the Ceratum Divinum. On the 28*th.* ſhe had no pain, nor any ſign of inflamation; yet upon the 29*th.* ſhe took a draught of Purging Wine; and on the 30*th.* part of the Electuary of Vipers, to diſſipate, and carry off the Reliques of the bad humours. On the 30*th.* of *June*, ſhe was brought to *Ulme*: where ſhe went on very well, till the 4*th.* of *Auguſt*, and compl. i ed of no bad Symptoms. On the 6*th.* I obſerved ſome white Caruncles; and asked the Lady if ſhe had not committed ſ me fault in her Dyet? She anſwered, that upon the perſwaſion of the Houſ keeper, ſhe had taken a draught of Wine, which was prohibited. On the 18*th.* Her Voice was hoarſe; and preſently that of *Hippocrates* came into my mind, in his Book of the *Glandules*: *That thoſe, who by a Diſeaſe, or any other Calamity, have their Breaſt taken away, their Voice is hariſh, and rough.* On the 9*th.* Being bound, ſhe made uſe again of the Purging Wine, mixed with Manna. On the 13*th.* For diverſion-ſake, ſhe Knit Cotton Gloves; and upon the continual motion of her Arms, an Herpes Miliaris, ſeaſed upon the lower part of her Breaſt. Upon which this ſort of exerciſe was forbidden, and the Patient took Purging Wine, that the bilious, and ſharp matter, might be brought from the Circumference, to the Center; and that way carried out of the Body. On

the 14*th.* of *Auguſt*, leaſt theſe ſharp humours might fall upon any of the Principal Parts of the Body. I ordered an Iſſue to be made for revulſion ſake, in her left Leg above the Knee, and one in the right Arm. On the 16*th.* By reaſon of the great heat of the weather, and the itching of the Herpes, there came forth a fleſhy excreſcence: ſhe took this Syrup.

Take of

Syrup of Roſes, two ounces.
Extract of Rubarb, three ſcruples and a half.
Diacarthamum, two ſcruples.
Crem of Tartar, one ſcruple.
Succory water as much as ſufficeth to make it into a liquid Syrup.

This gave her nine Stools, and brought away plenty of gall: I applyed to the fleſhy excreſcence, a powder made of four ſcruples of Roche Alume, and a dram of Tuty, and Chryſolite upon Lint; and to the Herpes, by reaſon of it's great itching, after fomenting it with the decoction of Mallows in fair Water: the *Ceratum Citrinum*; by the uſe of which remedies, the excreſcence was conſumed and the Herpes, with all the itching, vaniſhed. On the 7*th.* of September both the iſſues performed their office. From the 9*th* to the 15*th.* ſhe took the Aloe Pills of *Hier. Fabrit.* ab *Aquapendente* for a pain of her head, and being bound: and afterwards was in very good health, and the part effected was cicatrized. On the 28*th.* of *September*, a vein was opened to ſee what manner of blood ſhe had; which was very good, and red without any corruption. On the 6*th.* of *October*, ſhe left *Ulme* in very good health, and very joyful.

OBSERVATION LIII.

Of a Wound in the groin, and yard, made by a Bullet, Cured.

IN the month of *July* 1633. *N. N.* a Cornet of Horſe was wounded in a fight, with a Piſtol Bullet in the right thigh near to the groin, in the paſſage of Urine, and in the left thigh; for the Bullet perforating at the root of the yard, ran along the Urinary paſſage and hurt

hurt, the left thigh alſo. Being ſent for on the third day, and the Patient complaining of the laceration of the paſſage of Urine, of the inflammation of the yard, and of a Priapiſm, for fear of a gangræne I ordered him a lenitive Glyſter, and a ſpare diet. (which doth much avail in preventing and curing all inflamations) Into the Wound on the right ſide of the groin, in the Yard, and in the left thigh ; I injected, through a ſiphon , Oyl of Violets ſeven times waſhed in Carduus water, and water of Mallows ; mixed with a ſmall quantity of hony of Roſes ſtreined : and put in Tents dreſſed with the ſame Medicine ; and applyed over it, the Linimentum ſimplex, and a Cataplaſm, made of Barly Meal, Bean Meal, Crums of bread , ſimple oxymel, oyl of Roſes, and oyl of Violets ; and bound up the wounded parts with a convenient bandage,

On the 4*th*. day, for a great inflammation of the yard ; and a Feaver, the liver vein of the right Arm, was opened, and ſix ounces of Blood let out. On the ſame day, in the afternoon , the Saphena, of the right foot, was opened, and five ounces of Blood taken away. At night for a great pain in the Yard, and almoſt a ſuppreſſion of Urine, he uſed this Emulſion.

Take of

Melon Seeds, ſix drams,
Lettice ſeeds.
Poppy ſeeds, of each one dram.
Seeds of the Chaſte Tree, two ſcruples.
Water-Lilly Water.
Strawberry water.
Sorrel water, of each three ounces.
Make an Emulſion, to which add an ounce and a half of Syrup of Violets.

Mix them.

The 5*th*. day, he complained of a very great pain upon making water ; and an eſchar began to ſeparate in the Urinary paſſage , and in the other wounds : therefore I caſt in this mixture with the ſiphon.

Take of

Roſe water.
Mallow water.
Carduus water, of each two ounces.
Bole-Armoniek prepared.
Burnt Harts-horn, of each a dram.
Chryſolite prepared (for the ſtopping of the Blood) half a dram.

Oyl of Violets one ounce.
Mix them.

Into the wound of the Urinary paſſage, inſtead of a tent, I put through the orifice of the Glans, a Golden Catheter. *Tab.* XII. *Fig.* XVI. daubed over With the Linimentum ſimplex: I applyed to the groin, being anointed with Oyl of Roſes, fat wool; and ordered the loyns to be anointed with this oyntment.

Take of
The cooling oyntment of Galen, two ounces.
The oyntment of the Counteſs, half an ounce.
Oyl of Roſes, two drams.
Mix them.

On the *6th.* by reaſon of an obſtruction of the Urinary paſſage, from part of the Eſchar, the Patient could not make water through the Yard, therefore I took hold of it with the teeth of my pincers and extracted it. On the *7th.* the pain abated, and the Patient was ſomwhat better than the days before. On the eighth the Patient drank Wine, and played with the Maids. At night he complained of a Priapiſm, and inflaming pain of the Yard: for which, and for bleeding, he made uſe of his Glyſter, and Emulſion. I anointed his reins with the aſtringent Oyntment, caſt in a Mixture into the Yard; and put the pipe before mentioned covered with linnen and the linimentum ſimplex, into the paſſage of Urine. After the injection, I applyed oyl of Violets, and oyl of Roſes, to the Wound of the thigh and groin. On the *9th.* the inflammation continuing the *ſaphena* of the left foot was opened again, and all Medicines were applyed as the day before, On the *10th.* the patient was better and the Eſchar being taken away I injected, with the ſiphon, this following liquor into the paſſage of the Urine,

Take of
Plantain-water,
Self-heal-water,
Roſe-water,
Carduus-water, of each an ounce.
Prepared Tuty two drams.
Lapis Hæmatatis one ſcruple
Bole-Armenick prepared half a dram.
Mix them.

I dreſſed the Wound in the Thigh and Groin, with Digeſtives, Mundifi-

Mundificatives, Sarcoticks, and Epuloticks. He paſſed the 11*th.* day without any pain, or trouble. On the 12*th.* being bound, he took Bolus's.

Take of
Caſſia newly drawn one ounce,
Manna two drams,
Pouder of Liquirice one ounce.
White Sugar as much as ſufficeth to make them up.

Theſe gave him four Stools. On the 13*th.* For the Gonorrhea, I preſcribed this confection.

Take of
Conſerve of Mallows,
Violets,
And Succory-flowers, of each an ounce.
Seeds of the chaſte Tree a dram and half.
Letice-ſeeds one dram
White Poppy-ſeeds four ſcruples.
Syrup of Poppies as much as ſufficeth to make it up.

Of which he took morning and evening, before the Emulſion, the bigneſs of a Cheſnut. On the 14*th.* A thick ſlimy matter obſtructed the Yard, near to the Glans, ſo that the Urine came out at the Wound in the Groin: therefore I pulled out the tough matter with the Pincers; and after the injection of the Liquor laſt preſcribed, I put in the Pipe, dipped in the Linimentum Simplex, and bound it in with a Thread, leaſt it ſhould fall out. On the 15*th.* 16*th.* 17*th.* 18*th.* and 19*th.* He received much benefit from his Medicines; and white, ſoft, equal matter came out of the Wounds, in ſmall quantity. Upon which, red Fleſh began to grow. On the 22*th.* and 23. inſtead of the Pipe, *Tab.* XII. *Fig.* XVI. I daubed over a Wax Candle with the Ceratum Divinum; and, putting it in, conſolidated the Urinary Paſſage. In the time his Dyet was of Meat not hard of digeſtion, and made uſe of the cooling Emulſion. On the 27*th.* The Urinary Paſſage was conſolidated, and the outward Wounds of the Thigh, and Groin, were Skinned.

OBSERVATION LIV.

Of a Cancer in the Breaſt, ill cut off.

ON the 9*th* of *December*, 1643. By order of the Senate, I went with *George Riedlin*, and *John George Bauler*, Chyrurgions, to viſit the Wife of *Matthew N.* who having a great pain on the left Arm, told us that *N. N.* a Lithotomiſt, in the third week after ſhe was brought to Bed, without any preparation, or evacuation, cut with a Raſor, a hidden Cancer out of her left Breaſt: in the preſence of a certain Phyſician of *Ulme*, and left two large Tumours, under the Arm-Pit, to be diſſolved by outward Medicines. After twelve days the Chyrurgion applied a Cauſtick, made of Arſenick, to the former of them, which not quite eat it out; but cauſed ſuch pains, that the humours coming to it from al parts, the Arm was diſtended ſtrangely. Things being thus, I ſignified to her Husband, and the ſtanders by, that ſhe ſhould not be recovered, either by Medicines, or by Inſtruments; but would certainly periſh, thoſe Tumours being left; which hapned in a ſhort time: for her ſtrength failing upon thoſe Pains, would not admit of Purging, nor could the pain be mitigated, by any Anodine Medicine. Both the Phyſitian therefore, and the Lithotomiſt did ill. Firſt that they went about the Cure of a Cancer in the time of her Lying Inn, when they could not Purge the Body of melancholly humours. Secondly in that they did not totally extirpate it (being ignorant of *Hippocrates* his thirteenth Aphoriſm of the ſecond Section; *What is left of Diſeaſes cauſeth Relapſes*; but rather exaſperated it with dangerous Arſenick, the Purgations of the Womb being diverted; and thirdly that they did not commit the care of it to Perſons skilful in Anatomy (who after general remedies could have cut out Tumours, which are not deeply rooted without hurting the Veſſels, or fear of a Relaps; or elſe would have excuſed themſelves with the 38*th*. Aphoriſm of *Hippocrates* in the 6*th*. Section: *Who are troubled with hidden Cancers it is better not to heal them, for being healed they dye the ſooner, and not being healed, they Spin out their Life the longer.*

OBSER-

OBSERVATION LV.

Of a ſmall hidden Cancer in the Breaſt, diſcuſſed with Medicines.

IN the Month of *September*, 1634. *Barbara Heylerin* a Country-woman of *Bermaringen*, ſhewed me a Tumour in her left Breaſt, cauſed by the ſuppreſſion of her Courſes: which ſeemed not capable of being extirpated by any remedies, but only by the Knife: for it had all the ſigns of the Cancer; as hardneſs, a ſharp pain, roundneſs, inequality, black and blew, heat, and a Protuberance of black Veſſels. The Patient refuſed to have it cut out; and *Amatus Luſitanus* will not have a Cancer touched with any outward Medicines: yet becauſe I had known ſome, who by the uſe of choice remedies, had been delivered from hidden Cancers, I preſcribed the Patient this to Purge melancholly.

Take of
The Confection of Hamech ſix drams.
Extract of black Hellebore one ſcruple.
Crem of Tartar, half a ſcruple.
The Decoction of the Flowers and fruits as much as ſufficeth.
Mix them.

Begining to have pains in her Back, I ordered ſix ounces of blood to be taken out of the Saphena of the left foot. And this done, I Purged her Body, being as it were, Tinctured with black humours, with the Magiſtral Decoction in the laſt Table, *Let. E.* And after exact Purging, I applied to her Breſt, the Cerate of *Johannes Prævotius.*

Take of
Millet-Meal two ounces.
Oyl of Roſes ſtirred up in a Leaden Morter three ounces.
Pouder of Crude Lead half an ounce.
Golden Rod,
Sow-Thiſtle, and

Night-ſhade Poudered, of each two drams.
New Wax two ounces ſix drams.
Pine Rozin ten drams.
Mix them and make a Cerate.

Which in three Months ſpace did inſenſibly diſſolve the Tumour: in the mean time, ſeeing that her Courſes, which had been ſtopped for two years, could not be brought down by remedies: I made her an Iſſue on the inward part of each Thigh; to the end that the offending matter might be brought down to the lower parts; and kept them open a year, leaſt the humours ſhould gather together again, and offend ſome other Part. The next year thinking her ſelf to be very well, ſhe unhapily healed up the Iſſues; and began to complain again of the Tumour on her right Breaſt; which being taken out with Inſtruments, ſhe repeated the uſe of the Decoction, and renewed the Iſſues; which I ordered her to keep it open as long as ſhe lived, but whether ſhe doth I know not.

OBSERVATION LVI.

Of the pains of a Cancer mitigated.

THE Wife of *Peter Hielbronner*, had a ſmall hidden Cancer in her right Breaſt, and a great Ulcerated one in the left. The hidden one after the uſe of the Magiſtral Decoction, was diminiſhed with the Ceratum Oxelæum ſtirred up in a Leaden Morter; and the ſharp pains of the Ulcerated Cancer were mitigated, with that moſt excellent Anodine for a Cancer, as long as ſhe lived, to wit, with a mixture of the Linimentum Simplex, the Ceratum Oxelæum, and Oyl of Myrtles. The ſame Patient complained every year, of a very troubleſome galling on the Hips cauſed by her being ſo fat: for when ſhe walked, eſpecially in Summer time, thoſe Parts were rubbed, together excoriated, and inflamed. This excoriation the Patient her ſelf cured, by often waſhing it in freſh water, in which, Mallows were boyled, and beſprinkling it with this Pouder eaſie to be had.

Take of
Pomgranate Flowers,
Red Roſes,
Red Sanders, of each three drams.

Cam-

Campher half a dram.
Mix them

And make them into a Pouder, which doth alſo moſt ſpeedily cure the inflamation, and excoriation in Children, proceeding from the ſharpneſs of the Milk.

OBSERVATION LVII.

Of an ulceration and pain on the Breaſt mitigated by an Iſſue in the Thigh.

A Water-man of fourſcore years of Age, complained of a great ſtreightneſs, a violent pain, and bliſters on the right ſide of his Breaſt. The Patient ſent for a Chyrurgion, and deſired him again, and again, to heal up thoſe little Ulcers, which were very troubleſome to him. Thoſe Ulcers being healed; the pain, and ſtreightneſs about his Breaſt returned; which went off upon the breaking out of his Breaſt. Things being thus, and being ſent for to adviſe about it, I asked the old Man whether he had not formerly had old Ulcers in his Legs? to which he anſwered, that for ten years together he had a large Ulcer on his right Thigh, without any hindrance to him in going; and from the time that it was healed up, he was firſt troubled with a ſtreightneſs, then a pain, next with bliſters, and at laſt with little Ulcers about his Breaſt: for the revulſion therefore of theſe humours, I ordered an Iſſue to be made in that Thigh which was firſt Ulcerated, with the Inſtrument of *Julius Ceſſarius Placentinus*: about which there began to be an inflamation the next day; ſo that I encouraged the Patient to hope for a good recovery. The Eſchar being come out, and the Iſſue performing its duty: the pain of the Breaſt, and difficulty of breathing abated: ſo that in thirty days the Patient was free from thoſe Symptoms; and long after that enjoyed the health of an old Man, and went about his buſineſs, without any hindrance. From this I would have young Chyrurgions learn how dangerous it is, to heal up Ulcers of long continuance, eſpecially in old Age; and with how great benefit Iſſues are made, on the inſide of the Thigh; if by the error of the Patient, or Chyrurgion ſuch Ulcers which free the Body from impurities, have been healed up.

OBSER-

OBSERVATION LVIII.

Of a Gunſhot Wound in the back.

ON the 27*th.* of *January*, 1644. At three of the Clock in the afternoon *Balthaſer Steiger* a Country-Man, of *Gegglingen* as he was carrying home his Wife from *Ulme*, A Souldier that was drunk ſhot at them, and at once wounded not only the Country-Man but his Wife alſo: ſo as they were forced to be carried back again to *Ulme*; Where a Chyrurgion bound up the Wounds till the day following. On the 28*th.* of *January*, the pain of the Wound being very great; I was called in by the Patients Friend, and found the Country-Man wounded with three Bullets: of which the firſt ſtuck obliquely in the hinder part of the head, about the Lambdiodal Suture. The ſecond was drawn out about the eighth Rib of the Breaſt. And the third went ſo deep in a little above the Os Sacrum; that it could no ways be drawn out. We Dilated the Wound ſomewhat on the hinder part of the Head with Lint. The Wound on the Breaſt being of little moment, we dreſſed as a ſimple one; but the Wound near to the Os Sacrum, being very painful, cauſed ſo great an inflammation, that it did alſo affect the privy parts; and for ſtopping of the Blood we injected into it the white of an Egg ſtirred up with a Spatula: with the aſtringent Pouder of *Galen*, prepared Chryſolite, and Plantain water: for revulſion ſake, a cooling Glyſter was put up, and Blood taken from the Median vein of the right Arm. In the evening, the Patient took ſome ſpoonfuls of this Cordial water, and a cooling Syrup.

Take of
Black Cherry-water,
Burnet water, and
Roſe water, of each an ounce,
Cinnamon water, three drams.
The Anhalt Cephalick ſpirit, two ſcruples and a half.
Red Coral, prepared, half a dram.
Chryſolite prepared. half a ſcruple.
Pearl Tablets, four drams.
Mix them, and put them into a glaſs.

The

The cooling Syrup was this.

Tak eof
Syrup of Vinegar one dram.
Syrup of Juice of Citrons.
Endive water.
Water Lilly water, of each an ounce.
Prepared Pearl powdered, half a ſcruple,
Mix them, for one doſe.

The Country-Man's wife was wounded with five Bullets, of which one entred below the left Ear, and paſſing under the ſkin, went out about the bone of the lower Jaw; the Second, Third, and Fourth ſtuck in the Back between the Shoulders; but the fifth entred about the inward part of the Shoulder, and went out about the bending of the Arm. We dreſſed the wounds between the Shoulders, and about the Jaw-bone as ſimple, but that in the Arm as a Compound Wound: and for the great inflammation of the whole Arm, I put in tents dreſſed with this following digeſtive,

Take of
Turpentine waſhed in plantain water, one dram,
Oyl of Earth Worms, one dram.
A litle of the yolk an Egg.
Mix them,

Caſting in firſt oyl of Violets and oyl of earth worms, and applyed Diapalma ſpread upon ſtreight linnen covered over with the Linimentum ſimplex, and bound up the whole Arm with a catlaplaſm which was made of Barly meal, Bean meal, Crums of Bread, Oyl of Roſes, Camomile, and Earth-Worms, and red Wine; thoſe Medicines we made uſe of till the ſeventh day, at which time the Eſchar fell off, in the mean time ſhe obſerved a very good diet, and took preparing and altering remedies.

On the *8th.* day, ſhe was better; and the pain and inflammation of the whole Arm ceaſed, and therefore we put Tents into the Wounds covered with this Liniment.

Take of
Turpentine waſhed in plantain water, one dram.
Pouder of Myrrhe.
Aloes, of each one ſcruple.
Chryſolite prepared half a ſcruple,
Hony of Roſes ſtreyned, a dram and a half.

Bal-

Balſom of Peru an ounce and half.
Syrup of Red Roſes as much as ſufficeth,
Mix them and make them into a Liniment.

We applied the Cerate of Diapalma, and a Spunge preſſed out in Red Wine, and bound it up fitly with a Rowler, with two heads: the ſimple wounds began now to Cicatrize. On the 14*th.* The Wound on the Arm, and all the other were skinned; and the Patient being hapily recovered, went away to *Gegglinge*.

On the 3*d.* day, Although the hollowneſs in the hinder part of the Head of the Country-man was larger than the day before, yet we Dilated it with a Spunge twiſted; waſhing the Wound, by reaſon of the ill ſmell, with the Decoctum Divinum. The pain and inflamation about the Os Sacrum, by the help of the Cataplaſm above deſcribed, and the frequent uſe of Gliſters, much abated. On the 5*th.* day the quitter of the Wound about the Os Sacrum was white, and digeſted. The Wound on the hinder part of the Head was deep, and the Patient complained of a great pain of the Head, about the Fore-head. On the 7*th.* day the pain and ſwelling about the Os Sacrum ceaſed; and upon bleeding at the Noſe, the pain on the Fore-head went off. On the 8*th.* we put a Tent into the Wound of the Os Sacrum, dipped in the white of an Egg ſtirred up with this Pouder.

Take of
Prepared Chryſolite,
Lapis Hæmatites,
Aloe,
Bole-Armenick prepared, of each an ounce and half.
Mix them into a Pouder.

And bound over it the white Plaſter. On the 9*th.* all pain ceaſed, and the Patient reſted quietly the whole night. We put in a ſhorter Tent into the Wound about the Os Sacrum; and to the ſides a Spunge preſſed out in Red Wine lukewarm, and bound it up ſtreightly with the Bandage. The Wound on the Occiput being ſtill hollow, ſent out ſerous matter without pain.

On the 10*th.* The Patient ſaid that he had paſſed the night quietly, and the Wound about the Os Sacrum was better; and the matter generated was white, digeſted, and in a ſmall quantity; he complained of a heavy pain about the Eyes, and a few hours after he bled at the Noſe, whereby that heavineſs abated; and the Patient ſaid he was accuſtomed to this bleeding.

On the 11*th.* day, The Wound about the Os Sacrum was cicatrized.

On the 12*th.* I ſearched the Wound on the Occiput with an obtuſe

tuſe Probe; and coming in obliquely between the Cucular and patient Muſcle downward, I told the Patient and the Chyrurgion, that this Wound, by reaſon of the great Contuſion, was ſtill dangerous. Having reſted again very well the whole night. On the 13*th.* Becauſe that Souldiers Wintered in his Houſe, he Rode home, the Wound in his Head not being yet conſolidated: in the mean time the Chyrurgion viſited him every day, and dreſſed the Wound. After ten days the Chyrurgion deſired me to preſcribe the Patient a Purging Potion, which I did; and it gave him divers ſtools. The next day the Chyrurgion came again, telling me, that he was forced to lay open the Wound; and that he very well underſtood the manner how to do it. *February* the 28*th.* he opened it, but with what Knife I know not. On the 29*th.* The Patient had a Feaver; and on the firſt of *March* he took this purging Syrup.

Take of

Syrup of Roſes an ounce and half.
Of Manna ſix drams.
Extract of Rubarb,
Diacarthamum, of each half a dram.
Magiſtery of Tartar, one ſcruple,
Black Cherry-water, as much as ſufficeth.

Mix them and make a Liquid Syrup.

Which he Vomited up preſently, and was not once Purged therewith. On the 4*th.* The Patient being worſe, I was ſent for to *Geggingen*, and found him weak; the Wound covered with an Eryſipelas, the hollowneſs not laid open above the third Part, by the Chyrurgion: a little below it, a great hollowneſs, having eſcaped his knowledge; and was untouched by the Knife. The Pericranium ſo Putrified, that with a blunt Probe, it might be eaſily ſeparated from the Skull. The Wound being bound up, and the Patient recovering ſome ſtrength, the Cephalick Vein on the ſame ſide was opened: out of which there came ſerous and half Putrified blood. Things being thus, I adviſed the Patient to be brought to *Ulme* again, in a Litter. On the 4*th.* Being in the City, I unbound the Wound, and found that the Eryſipelas had ſpread it ſelf, not only about the Wound, but all over the fore-part, and hinder-part of the Head; ſo that, the Patient complained of a great pain of his Head, and could by no means open his Eyes.

On the 5*th.* For a great pain and inward heat, he took this cooling Gliſter.

Take of

Sorrel Roots;

Marſh

Marsh-mallow Roots, of each half an ounce.
The Leaves of Water Lillies,
Violets,
Mallows,
Bettony,
Flowers of Camomile, of each half a handful.
Seeds of Flax,
Citrons,
Fenel, of each a dram.
Raisins half an ounce.

Boyl them in a sufficient quantity of Water, and strain them, then add of,

Hony of Roses four ounces.
Oyl of Violets,
Oyl of Camomile, of each an ounce and half.

Mix them for a Glister.

In the evening he took the cooling Syrup. *On the 6th.* He had a quiet night, and complained of Heart-burning, and great weakness; and therefore I prescribed this.

Take of
Conserve of Roses Vitriolated,
Conserve of Violets, of each an ounce.
Confection of Alkermes one dram.
Citron Pill preserved, one dram.
Syrup of the Juice of Citrons, as much as sufficeth.

Mix them and make them up into an Electuary.

Of this he took a little often in a day. The Wound cast out matter half bloody, and the Pericranium appeared almost Putrified: although this Wound required a greater Dilatation, by reason of its hollowness: yet because of his weakness, it was not convenient to Dilate it; in the mean time, for the streightness of his Breast, and want of sleep, he made use of this Emulsion.

Take of
Melon-seeds half an ounce.
Poppy-seeds one dram.
Sweet Almonds two drams.
Black Cherry-water.
Water Lilli-water,
Strawbery-water, of each three ounces.

Make an Emulsion, to which add,
Magistery of Coral half a dram.

Pearl

Pearl Sugar half an ounce.
Put them into a Glaſs.

On the 7*th.* day the Patient was better, the ſwelling of the Head, and Face abated. The Wound ſent out digeſted matter: the lips were foul, and therefore the Oyntment of *Ægyptiacum* was applied; and ſeeing the Pericranium was ſtill Putrid, we dreſſed it with Syrup of Red Roſes, mixed with Spirit of Wine: For his thirſt and pain of the Head, he took the Glifter preſcribed two days before.

On the 8*th.* The heat of the Feaver ſomwhat abated; but becauſe the Patient complained of a heat and pain of the Wound, about the Os Sacrum, which was now healed up, he made uſe of the ordinary Glifter, and the Emulſion of Melon-ſeeds. To the Wound ſtill Sordide, we applied the Oyntment *Ægyptiacum*; and to the Pericranium almoſt corrupted, the Syrup of Red Roſes, mixed with Spirit of Wine, and our Decoctum Divinum. On the 9*th.* He ſaid that he had ſlept ſix hours: matter tending to greenneſs flowed out of the Wound in more quantity; in the evening he was better, and all his heat went off.

On the 10*th.* In the evening, he complained of a great heat of his Back and a violent pain of the Head: ſaying he could not ſleep, for dreams that troubled him; and therefore he made uſe of his ordinary Glifter, and he voided thrice bilious matter.

On the 11*th.* he was better, and ſpent all the night quietly. On the 12*th.* [illegible] He went on well, and the inward hollowneſs generated [illegible] matter.

On the 13*th.* well, but by reaſon he abounded with Choller, he took this following Syrup.

Take of
Looſening Syrup of Roſes two ounces.
Extract of Rubarb four ſcruples and a half.
Diacarthamum one ſcruple.
Magiſtery of Tartar, half a ſcruple.
Black Cherry-water as much as ſufficeth.
Mix them.

On the 13*th.* Seeing that the lower hollowneſs could no ways be Conſolidated, by reaſon of the hole above it, I adviſed to open it, that the matter contained in it, might get out; but ſeeing it had been attempted once before in vain, he was very much againſt it; therefore in the evening I put in a Wax candle, to the bottom of the hollowneſs, and left it there all night: in the morning I drew out the Candle, and put into the cavity, inſtead of that, a Needle,

(*Tab.* XII. *Fig.* VIII.) carrying Thread at one end, or the Armed Seton. (*Tab.* VII. *Fig.* VII.) and to the other end a piece of Wax, was faſtned; and unknown to the Patient, I ſuddenly Perforated the skin at the bottom, and left the Thread in the hollowneſs, as in a Seton. On the 30*th.* He being Purged again, and the median Vein of the right Arm being opened, he was better; and the upper hole was Conſolidated as far as the Thread, On the 6*th.* of *April*, being very well, he left *Ulme*. On the 8*th.* day The Thread was drawn out, and on the 10*th.* the Wound was Cicatrized.

OBSERVATION LIX.

Of a Wound in the Breaſt mortal, upon neglecting the Paracenteſis.

ON the 10*th.* of *March*, 1645, At eight of the Clock in the evening, a certain young Man received a very narrow Wound in the Back, two Fingers breadth below the right Shoulder Bone, and four Fingers breadth from the Back Bone; which Penetrated into the Cavity. A Chyrurgion otherwiſe not unskilful, (whom the wounded Perſon ſent for immediately upon his being hurt,) dreſſed this as a ſimple Wound; and as if it had not Penetrated: ſo that the blood flowed out of the Intercoſtal Veſſels which were wounded, into the Cavity of the Breaſt, and cauſed ſuch a ſtreightneſs, that the Parents ordered them to ſend for me. About twelve a Clock at night, I unbound the Wound, which by reaſon of the Figure of the Sword, the Poſture of the Breaſt changed, and the applying of Aſtringent Medicines, was ſo narrow, that we could neither come into the Cavity with a Probe, nor inject Medicines to ſtop the blood, through the Siphon, nor apply them upon the Tent. Wherefore I declared to the Parents and the ſtanders by, the danger the Patient was in; and propoſed the Paracentheſis to be made without delay, in the place aſſigned by *Hippocrates*, *Tab.* XXXVII. *Fig.* II. ϒ. which might give a Diſcharge to that matter, which did threaten certain Suffocation; But ſeeing that the Parents would not admit of this (without doubt) neceſſary operation in this Patient, and the matter, by giving Diureticks, could not ſo ſuddenly be evacuated by the Paſſages of Urine; the Patient being choaked up, dyed on the ſixth day; who very probably, if the Dilacation of the Wound had not been neglected at the begining, might have been preſerved: for his Lungs were not hurt, becauſe the Patient never did ſpit blood, nor the Gullet,

Gullet, becauſe he ſwallowed his Meat, and Drink, without difficulty: his Heart was not wounded, nor yet the Vena Cava, nor great Artery: becauſe if ſo, the Patient would not have lived ſo long after his being wounded. The Pericardium or caſe to the Heart was intire; for the Heart deprived of it's moiſture, doth ſuddenly fail; the Diaphragm was not concerned; becauſe theſe Symptoms did not appear, which all writers in Chyrurgery declare to accompany that Wound. But the Patient complained only of a ſtreightneſs of the Breaſt, cauſed by a copious collection of Blood; hence I would have young Chyrurgions learn, when they they are called to the cure of a Wound on the Breaſt: to ſearch diligently with their Probe (placing the Patient, if it can be, in the ſame poſture as when he was hurt;) to ſee if the Wound hath penetrated or no; if it hath, to pronounce it dangerous: if it be narrow, by the conſent of the Patient, and the ſtanders by, to dilate it with a Knife. *Tab.* XXXVII. *Fig.* V. E. That the matter collected in the Breaſt may flow out of it's own accord, or be brought out by putting in a pipe. *Tab.* XXXVII. *Fig.* VI. But if it be wide, for the reaſons abovesaid to keep it open: and if the matter will neither be evacuated through the Wound, by reaſon of the deep ſituation of it; nor be drawn out through the Pipe by reaſon of it's thickneſs: nor be driven to the Urinary paſſages by reaſon of it's great quantity: To propoſe the only remedy left, to wit; the perforation of the Breaſt whileſt the Patient hath yet ſtrength: and this whether it be granted or refuſed: that neither the Patients Friends, nor he who gave the Wound, if the Patient dye, may have any reaſon to blame them for negligence or ought elſe.

OBSERVATION LX.

Of the taking off a Yard.

IN the Month of *July* 1635. a certain Citizen of *Ulme* having his Yard mortified, I cut it off near the live part with a knife, *Tab.* XII. *Fig.* VI. and to ſtop the Blood touched the Veins and Arteries with hot Irons till I had taken off all the Gangrene, and the Patient was ſenſible of the fire: the Operation being done, and a pipe, *Tab.* XII. *Fig.* XVI. Put into the paſſage of Urine: I applyed to the burnt place, the Egyptiacum Oyntment of *Maſue*, to make the Eſchar fall off: which being taken away: I ſoon Conſolidated the Ul-

with the Ceratum divinum: and the Patient was healed. I knew a little old Man, whoſe Yard was cut off, for the Lues Venerea; by the ordinary Chyrurgion of the Hoſpital, of *Padua*. And by applying convenient Medicines the Ulcer was Cicatrized.

OBSERVATION LXI.

Of Incurable Cancers proceeding from the Obſtruction of the paſſage of Bladder and Gall.

IN the Year 1622. I opened the Body of a *French* Gentleman who died of very ſharp pains in the Colick: and I found a hidden Cancer in the gut called the Colon; the cauſe of which, in my Judgment was the Obſtruction of the paſſage of Gall: for that part of it where it is inſerted into the Duodenum was ſo obſtructed with a ſtone of the bigneſs of a Pea; that not the leaſt quantity of Gall could be diſcharged through it: Yet nature did not, (as for the moſt part ſhe doth in ſuch caſes) throw that quantity of Gall, into the whole habit of the Body, but carried it to the Colon. On the 24. of *January* 1624. In the body of *Mrs. Katharine N.* a Venetian, who died of an Ulcerated Canter in the Womb, I found the Bladder of Gall filled and diſtended with a Stone tranſparent like Chryſtall: ſo that it was not fit to receive any Gall, yet Nature did ſend that Gall, which was daily generated to the circumference of the body, but to the Womb. From theſe two accounts two things may be noted. Firſt that the Jaundiſe doth not always happen upon an obſtruction of the paſſage or bladder of Gall; but the Gall may ſometimes derived to the Guts, the Womb, or ſome other Noble part. Secondly, the Lecture which the moſt excellent *Spigelius* had upon theſe. If at Cancer in theſe perſons had had bred in the Breaſt, or Limbs, after it had been rooted out with the Knife, the Wound would ſcarce have been brought to heal; or if it had been healed up the malignant matter would have invaded the principal parts, and deſtroyed the Patient within three or four years: The reaſon being evident, becauſe the cauſe of the Diſeaſe could not be taken away, which was the obſtinate obſtruction of the Bladder of Gall. I took notice of an incurable obſtruction of the ſpleen in a Woman who while ſhe lived, for ſome years had a painful Ulcer in her foot, which as often as ſhe healed up, ſhe was troubled with a Quartan Ague: till the humour, ſeeing the

the collection of it could not be hindred, was daily evacuated by an Issue made in her Thigh, and by this means, both the Quartan Ague, and the breaking out of the Ulcer in the Legg, were remedied.

OBSERVATION LXII.

Of the left Shoulder Blade corrupted.

IN the Month of *March*, 1632. I Cured the left Scapula of the Major's Son of *Burlingfing*, which was very much corrupted, by casting in daily at the two Orifices of the hollowness, this Decoction kept open with Tents, dressed with Betony Oyntment.

Take of
The Roots of Orrice,
Round Birth-wort,
Great Comfrey, of each an ounce.
The Leaves of Speedwell,
Mouse-ear,
Burnet,
Vervain,
Periwinkle,
Strawberries, of each a handful.
Seeds of Plantain,
Succory, of each half an ounce.
Fountain-water six Pints.
White-wine two Pints.

Boyl away the third part, and add to it streined out, four ounces of Hony of Roses, mix them for an iniection, till the Scapula separated so great a Scale of the Bone, that by reason of the narrowness of the Orifice, I could not draw it out; and therefore I cut open the distance between the Orifices with the Incision-Knife, *Tab.* XIV. *Fig.* II, or III. and took out the separated Scale with the Pincers and conglutinated the sides of the hollowness with the Shoulder-blade, by applying a new Spunge dipped in Red Wine, and pressed out; and binding on streight the Breast-plate Bandage described in the last Table, *Let. S.*

OBSERVATION LXIII.

Of a Stone taken out of the Urinary paſſage, without the Probe or Inciſion.

IN the month of *February*, 1639. A young Man of *Leipheeme*, was received into the Hoſpital of *Ulme*, not being able to hold his water, from a laceration of the Neck of the Bladder, by a Stone weighing ſix ounces; which the famous cutter for the ſtone of *Augsburg*, *Angelus Merian*, drew out with the Forceps; but, becauſe the Diſeaſe was incurable, being furniſhed with Medicines to mitigate the ſharpneſs of Urine, and the galling of the parts, he went from *Ulme*. The ſame year, in the month of *May*, this Perſon was troubled with a ſtoppage of Urine, from a Stone that obſtructed the Urinary paſſages; he deſired my advice, and having received it by Letter, he took morning and evening, a Doſe of this Julep.

Take of
Fernelius his Syrup of Marſh-mallows four ounces.
Mallows-water eight ounces.
Mix them for two Doſes.

And ſet often in a ſoftning Bath, till the Stone being round like a hard flint, and weighing almoſt three drams, being driven down by Urine to the end of the Yard, I took hold of it with the Teeth of the Pincers, and ſo without the Inciſion of the *Urethra*, (propounded by *Senertus*, *Inſtit. Lib.* 5. *Part* 1. *Sect.* 2. *c.* 13. out of *Fabrit. Hildan.* his Treatiſe about Cutting for the Stone in the Bladder, or the *Tab.* XIV. *Fig.* VIII. I drew it out.

OBSER.

OBSERVATION LXIV.

Of the pricking of a Nerve.

IN Nerves pricked, or cut, after general Purgation, ſome Phyſicians cut the skin at right angles, that the corrupt matter may come out freely, and the Medicines applied may come at the puncture of the Nerves. Others after a croſs Inciſion, cut the Nerve alſo in ſunder with good ſucceſs, before that they apply outward remedies, whereby the influx of humours is hindred, which encreaſeth the pain, and is the cauſe of the inflamation, and convulſion; But becauſe this cutting of the skin, or diſſection of the wounded Nerve, Patients will ſeldome admit off: for the benefit of Barbers, who divers times when they open a Vein with a Lancet, do unskilfully hurt the Nerves, which are near it, or lye under it. I will ſet down this approved remedy.

Take of
The beſt Euphorbium one ſcruple.
Turpentine half an ounce.
Wax as much.
Mix them into an Oyntment.

Which is to be ſpread upon Linnen, and applied hot. With this alone preſently applied, I have ſafely cured divers ſuch punctures of the Nerves, as the moſt eminent, and my moſt dear Kinſman and Colleague D. *Johannes Sebaſtianus Bloſius*, and *Nicholas Reuſſe* Chyrurgion will teſtifie.

OBSERVATION LXV.

Of a Venereal Node, cured by Chyrurgery.

Martin Fiſcher complained of a Venereall Node on the left Leg; which would neither yeild to a ſuderifick courſe, nor to the

Cerate recommended under the Letter *R. Tab.* XLIII. And there-
[illegible] discovered the Shin-bone, where it was foul with a Cauſtick,
[illegible] away to the quick, with the ſcraping Irons. The ope-
[illegible] ſtanched, I applied a drying Pouder to the Bone, and dry
[illegible] the Ulcer with common Medicines to incarnate and
[illegible] ſlowly recovering upon this operation, and
[illegible] his health many years, and afterwards dyed
[illegible] Sometimes the virulency of this diſeaſe is ſuch,
[illegible] Shin-bone to the Marrow, in which caſe, the uſe
[illegible] not ſufficient; but beſides theſe, Trepans, and
[illegible] neceſſary to the rooting and conſuming the remain-
[illegible] it, will not be ſeperated, by ſprinkling the Pou-
[illegible] upon it. This ſort of virulency, I obſerved at
[illegible] old Woman of fourſcore years of Age: out of whoſe
[illegible] *Fabritius* often drew out Bones, of the bigneſs of the fore-

OBSERVATION LXVI.

Of a Meliceris in the Shoulder, and Knee.

IN the Year, 1629. *Andreas Fiſcher*, Coachman of *Ulme*, complained of a troubleſome Meliceris on his right Shoulder; which after preparing and purging his Body, I applied the Cerate Diaſinapios, deſcribed in the laſt Table, under the Letter *C.* The peculiar efficacy of this Cerate againſt Melicerides, I lately experienced in *Waldburga Heiglerin*, who by my advice, applied it to a Meliceris in the right knee, of the bigneſs of a Gooſe Egg: which it totally diſcuſſed in a months time, and all thoſe humours which were gathered to the part at the begining, by neglect of general remedies.

OBSER-

OBSERVATION LXVII.

Of Barrenneſs from a Rupture ill reduced.

THE Anabaptiſts in *Moravia*, in curing the Rupture, after the Gut is reduced, ſtop up the hole of the Peritoneum with the Teſticle; But this way of curing, skilful Chyrurgions do no ways commend. For if the Teſticle be leſs then the hole, it is eaſily excluded again, and if it be bigger, it is ſo ſtreightned, and painful: that Inflammation, Barrenneſs, or death, may ſucceed; therefore let young Chyrurgions obſerve in the putting up the Gut, to leave the Stone in the Scrotum, leaſt being thruſt into the hole, it ſhould become painful, and hinder Coition. I have known ſome, that from this cauſe alone, being married, have lived a fruitleſs and quarrelſome life; As alſo the Baker's Son, who what a Husband he will prove, time will ſhew.

OBSERVATION LXVIII.

Of an Eryſipelas, or St. Anthonie's *fire.*

I have moſt happily cured a great number of Eryſipelas's by the uſe of the Linimentum Simplex, often changing it while it is freſh, and not rancid (as it isdeſcribed in the 52. Obſervation) and not neglecting general and inward cooling remedies. In defect of this Liniment, I never found any thing better than Oyl of ſweet Almonds newly drawn, waſhed nine times with Nightſhade-water in a Glaſs Veſſel: with which the part effected is to be anointed cold till it's violent heat be abated. Others commend Balſome of Saturn, made with Linſeed Oyl to anoint the part therewith often with a Feather.

OBSERVATION LXIX.

In the Year 1634. *Johannes Philippus* Schmid Captain of the [illegible] *Ulme*; was wounded with a Bullet through the ſhoulder in the battel near *Nordlingen*: and coming to *Ulme* fell into the hands of an unſkilful Chyrurgion, who kept open the orifices of the Wound, not with tents but with a ſeton paſſed through, omitting all purgation, which cauſed ſo great a pain, that a Gangreen followed upon the inflammation, to whom, coming by chance, I preſently removed the Seton, and applyed a Cataplaſm made of the Meal of Mallows and Roſe-water, and keeping his belly open with a Lenitive Glyſter, for revulſion ſake, I took away ſeven ounces of blood from his left Arm; which was bilious and ſerous; and the next day the Gangreen amending, the Patient took a potion to purge Choller. which gave him ten ſtools.

Take of
Solutive Syrup of Roſes, two ounces.
Extract of Rubarb, one dram.
Diacarthamum, two ſcruples.
Magiſtery of Tartar, half a ſcruple.
Burrage water as much as ſufficeth to make a potion.

On the third day, the Gangreen diſappeared: on the days following I ſeparated the putrified fleſh about about the Wound, with the Egyptian Oyntment of *Hildanus*: and in a months time moſt happily made a cure of this Wound. The wonderfull efficacy of this Balm, the Patient being recovered thinks he can never enough commend, and aſcribeth to it the ſole preſervation of his Arm.

OBSER-

OBSERVATION LXX.

Of a Herpes Miliaris corroding.

THE burning Ulcers of a corroding Herpes Miliaris after the uſe of medicines cooling and purging Choller, often repeated, and waſhing the part effected with a decoction of Mallows in fair waters, I have cured in a ſhort time with that excellent Cerate of Tobacco: the deſcription of which I have inſerted into the laſt Table, under the letter *C.* taken out of *Fabricius* ab *Aquapendente Peneteuch. Chyrurg.* but if the Ulcers have crept in too deep, let the former Cerate be reduced into the form of an Oyntment.

Take of
The yellow Cerate, one ounce.
As much Oyl of Myrtles as ſufficeth to make it into an Oyntment.

Which being ſpread upon Lint is to be applyed, and leaſt it fall off to be kept on with the Cerate of Ceruſs applyed over it.

OBSERVATION LXXI.

Of an Ulcerated Eryſipelas.

ON the 24*th.* of *Auguſt* 1645. The worthy Dr. *Nicholas Dicterich* ſurnamed *Spereiter* complained of an Ulcerated Eryſipelas on both Leggs with a very great itching, and flux of the ſharp matter through the pores of the skin: and ſeeing this effect totally depended upon the boyling of the Blood, and the abundance of Choller, firſt giving him a laxative and cooling Glyſter.

Take of

The

The Species for the Carminative Decoction, one ounce.
Violets one handfull.
Boyl them in fair water, and to nine ounces of it, strayned out, add,
Hony of Roſes ſolutive, two ounces and a half.
Caſſia newly drawn, one ounce,
Oyl of Violets, two drams.
Mix them.

I ordered ſix ounces of Blood to be taken from the Liver vein and to temper his heat in the Evening I preſcribed this Julep.

Take of
The Decoction of Candied Succory roots, eight ounces.
Succory water as much as ſufficeth.
Mix them, for two doſes.

His drink was Barly water, mixed with the Tincture of Roſes, and his meat cooling and refreſhing, for the mitigating of the itching of the part, and hindring an afflux of humours a Chyrurgeon of the Army applyed often in the night linnen thrice double preſſed out of this following Decoction hot.

Take of
Mallows, one handful.
Speedwell, half a handful.
Crude Alume powdered, one dram.
Boyl them in a ſufficient quantity of River water, and keep what is ſtreyned out in a pot.

On the *25th.* the itching and flux of ſharp matter through the Skin ceaſed: whereupon I applied to the Ulcerated parts of the Leggs, Mynſich's, Plaſter of Saturn mixed with the Linimentum ſimplex, and ſpread upon a large Cloath: and the Patient to Purge ſerous, and bilious humours, took this following potion.

Take of
Solutive Syrup of Roſes three ounces.
Extract of Rubarb
Diacarthamum, of each two ſcruples.
Endive water as much as ſufficeth.
Mix them, make it up for a draught.

From this he had ten ſtools. On the *26th.* by reaſon of great diſturbance

of mind ſo violent an inflammation invaded his leggs, that it threatned an immediate Gangreen: for preventing which, I applyed hot my moſt approved Cataplaſm, *Obſerv. 69*, And as often as it dried I commanded another to be layed on. On the *27th.* The inflammation remitted, and on the *28th.* it ceaſed, and therefore I again applyed to the Ulcers this mixture.

Take of
Mynſicht's Plaſter of Saturn.
Linimentum Simplex, of each equal parts.

Till that on the *9th.* of *September* they were Conſolidated, and the Patient complained no longer of any pain or heat.

On the *12th.* for preventing a relapſe, I preſcribed a purging Wine, after the ſucceſſful uſe of which I burned an Iſſue in the right Arm, and ordered an Electuary to rub the Teeth with, for the ſtrengthning the Roots of the Teeth, and cleanſing their impurity.

Take of
Porcelan Powdered, four ounces.
Wood of Aloes.
Yellow Sanders, of each an ounce.
Muſk, half a ſcruple.
Orice Roots, two ounces and a half.
Crude Alume two drams.
The beſt Hony two pintes, Mix them upon the Fire into the form of an Electuary.

OBSERVATION LXXII.

Of Oedematous Tumours.

WIth the noble Lime water, made uſe of for ſome days, I diſcuſſed obſtinate Oedematous Tumonrs. Take a peice of quick Lime of the bigneſs of a Wallnut; put into boyling water til it be diſſolved; which done, ſtirr them up together, and let them ſettle: then pour off the clear water into another Veſſel: and dipp into it a new Spunge which ſtill participates of a nitrous quality: then preſs it out and apply it hot to the part, but take notice that the part affected

fected is firſt to be anointed with Oyl of ſweet Almonds or Hogs-greaſe; for it may eaſily happen that a piece of the Lime which is very ſharp and corroſive, may paſs into the water transfuſed, and applyed together with the Spunge may Fret and Corode the part: the ſame praiſe a Spunge dipped in Water, and Vinegar deſerveth; If the diſeaſe be be in the beginning or Augmentation.

OBSERVATION LXXIII.

Of Vomiting Blood Mortal.

A Perſon of 40. Years of Age, of a hot and dry temperament complained that four Months before, being Feaveriſh, he had Vomited much Blood, which ceaſed then upon rubbing the extreme parts, and applying Remedies to cool the Liver: but that now again about twelve a Clock at night, he had firſt vomited up blood, and then his ſupper, I ordered him this powder to be taken in Plantain water.

Take of
The powder of Burnet Roots,
Of Great comfry Roots, of each two ſcruples.
Mix them, for one Doſe.

The next day, upon the Patients Vomiting ten ounces of Blood again, I ordered Cupping Glaſſes, to be applyed without ſcarification to his his back and Limbs: and this Domeſtick Glyſter to be injected.

Take of
The Decoction of the Herb Mercury, ten ounces.
Hony, two ounces.
Lenitive Electuary, one ounce.
Mix them, for a Glyſter.

The third day, he complained of a bitterneſs of the Mouth, and afterwards Vomited Gall in great quantity, being aſked whether he ever had any Ulcers in his Leggs: he anſwered, that he had had Exulcerations on both his Leggs, which were cured with outward Remedies, and that an Eryſipelas ſucceeded upon the Conſolidation of theſe Ulcers

cers, which alſo diſappeared upon drinking the Decoction of *Guaiacum*. The Conſolidation of theſe Ulcers, was without doubt the cauſe of his vomiting blood: for revulſion therefore of the humours, I made an Iſſue, in both Thighs, with the Cautery of *Placentinus*, four Fingers above the Knee: for harein, in my judgement, conſiſted the preſervation of the life of the Patient: who otherwiſe would ſoon dye; But upon theſe Iſſues, ſeeing there was no Feaver hapned as it is wont, nor no inflamation, nor Eryſipelas, which might ſignifie that the matter tended from the Center to the Circumference, and extream parts, it was a certain ſign that the matter was fixed in the Body, and that the Patient was like to dye. On the *5th.* day, he vomited blood again plentifully; and on the *6th.* he dyed in Convulſions.

OBSERVATION LXXIV.

Of an Hernia Carnoſa.

IN the month of *Auguſt*, 1634. A certain Gentleman complained of a great fleſhy ſwelling, on the left Teſticle, which after general remedies, and keeping a good dyet, I diſſolved with this following Plaiſter, and the Pouder of the Roots of Reſt-harrow, which *Petrus Matthiolus* in his Comment upon *Dioſcorides*, *L. 2. C. 18.* commendeth unto us.

Take of
Gum Ammoniacum,
Galbanum,
Bdelium, of each half an ounce.
To this diſſolved in Vinegar add,
Ducks fat melted and ſtreined, an ounce and half.
Yellow Wax two ounces.
Oyl of white Lillies,
Marrow of an Oxes Leg, of each ten drams.
Mix them into the form of a Plaiſter.

Being ſpread upon Linnen, apply it to the Codd, and renew it every fourth day.

He

He took every morning a dram of the Pouder of Reſt-harrow, in a draught of Wormwood-Wine; and permitted an Iſſue to be made in the inward part of his Thigh, four Fingers above the Knee, for the derivation of the humours, and continned the uſe of theſe remedies: ſo that in four months time, he received his former health. In the Year, 1641. *George Clacer* was taken into the Hoſpital of *Ulme*, living at *Reichenbach*, and was hapily cured with the ſame remedies. Beſides theſe many others have by degrees recovered by the help of this Pouder alone, whoſe names with many others, afflicted in ſuch parts, many of them alſo being ſtill alive, I willingly omit.

OBSERVATION LXXV.

Of a Fiſtula in the right Breaſt.

A Certain Country Woman being lately delivered, ſuffered an inflamation, and concretion of the Milk, in her right Breaſt; which being hardned with two many Diſcutients, and inconvenient Medicines applied, degenerated, firſt into an Abſceſs, and at length into a Fiſtula, very deep, callous, and with a narrow Orifice; wherefore, I perſwaded the Ordinary Chyrurgion to the Patient, that after having purged her with general Purgers, he would ſufficiently Dilate the Orifice of the Fiſtula, with Tents made of Gentian and then conſume the Callus, with a Linnen Tent once put in covered over with this Medicine.

Take of
Mercury Præcipitate,
Burnt Alum,
Virid. Æris,
Salt Peter, of each equal parts,
Whites of Eggs a convenient quantity.
Mix and make an Oyntment.

Which doth preſently extirpate the Callus of Fiſtula's; but not ſo pleaſantly, nor ſafely, in Parts that are nervous, or endowed with exquiſite ſenſe. The Callus being conſumed, I mundified the Ulcer with the Ægyptiacum Oyntment of *Meſue*; and being mundified, I incarnated it with Betony Oyntment, and Conſolidated it, with the Ceratum Divinum, and diſſolved the Relicks of the hard Tumour, with

with the Ceratum Oxelæum; and thus the Chyrurgion taking my counſel, the Patient recovered her ſo much deſired health.

OBSERVATION LXXVI.

Of a Relaps into the Piles, from the uſe of Scammony.

A Butcher of *Ulme*, yet living, was freed from continual pains of the Hemorrhoides by the Pipe and Stile, *Tab.* XVI. *Fig.* III. and IV. But relapſed as often as he took in at the Mouth any purging Medicine, in which Senna, or Scammony was an ingredient. Whereupon being forbidden by my ſelf and other eminent Phyſitians, the uſe of Sene, or Scammony, he hath lived many years free from this cruel pain of the Piles, in very good health.

OBSERVATION LXXVII.

Of the Fundament not ſufficiently Perforated.

IN the Year, 1640. *Jacob Neubronner*, Citizen and Shear-man of *Ulme*, had a Son born, whoſe Fundament was not ſufficiently Perforated, but ſo ſtreight, that it would ſcarce admit of the end of an ordinary Pin. Being ſent for, I propoſed the operation deſcribed, *Tab.* XLI. *Fig.* VI. which the Parents would not admit off, and therefore I attempted the neceſſary Dilatation of it with ſharp Tents, made of the Roots of Gentian, which being beſmeared with Oyl, I put up into the Orifice of the Fundament, and left it there: that being ſwelled, it might ſufficiently Dilate the Part. This manner of proceeding with the Gentian Roots may be ſeen before in the 40*th.* Obſervation, and the manner of binding it, that the Tents fall not out, *Tab.* XLI. *Fig.* VII. I knew a Midwife at *Padoa*: who Perforated the Anus totally ſtopped up with a common Needle, and enlarged the hole mad by putting in tents of Gentian.

OBSER-

OBSERVATION LXXVIII.

Of the bringing forth of a dead Child.

WHen the dead Child cannot be brought out by inward remedies, of which there is mention made, *Tab.* XLI. *Fig.* V. a ſuffumigation taken into the lower parts often in a day, made of putrid Grapes is much commended. The efficacy of which, I admired at *Ulme*, in the Perſon of a Noble Matron yet living, who at that time would rather have dyed, than admitted of that ſafe relief from the Chyrurgions hands, or from the Hook, or other Inſtruments, (which to ſpeak the truth, I never ſaw uſed to the living) but dead Children, from the retention of which thoſe in Labour dye; I have drawn intirely out of three Bodies, with Hooks Delineated, *Tab.* XVII. *Fig.* IV. And without the leaſt Laceration of the Womb, or Vagina, and I obſerved in them, that their opinion is true, who write that the Bones of the Os Pubis, in a hard labour are ſeparated one from nother.

OBSERVATION LXXIX.

Of a virulent Gonorrhea.

A Certain *German* Noble Man, of about twenty years of Age, of a hot and dry Temperament, three days after impure Coition, began to complain of a virulent Gonorrhea; for the Cure of which, I purged him divers times with this Bolus.

Take of
Venice Turpentine waſhed in Mallow-water, four ſcruples.
Caſſia newly drawn ſix drams.
Mercurius Dulcis fourteen grains.
Mix them, and with Sugar make them into a Bolus.

Then

Then for ordinary Drink, I preſcribed this appropriated Decoction.

Take of
Whole Barly one Pugil.
Melon-ſeeds, both bruiſed, one ounce.
Leaves of Horſe-tail half a handful.
Fountain water eight pints.
Boyl them to the Conſumption of half, and in the end add a dram of Liquerice thinly ſliced.

For mitigating the heat of the Reins, I ordered this following cooling Oyntment.

Take of
The Cerate of *Sanders*,
Oyntment of Roſes,
Comitiſſæ, of each ſix drams.
Oyl of Water Lillies,
Oyl of Violets, of each half an ounce.
Camphire poudered half a ſcruple.
Mix them for an Oyntment.

And every morning three hours before Dinner, I gave him the mixture which *Johannes Petrus Faber* commendeth made of an ounce of Juice of Lemmons, and a ſcruple of Spirit of Campher: with which remedies the Patient was recovered in ſix days time, without injections, (which ſome uſe with wonderful ſucceſs, made of the Juice of Plantain, Hony of Roſes, Mercury dulcified, and Aloe of Zoccotora; with *Quercetan's*-water, for the Gonorrhea, given divers days after Mercurial Purgers, I have cured many.

OBRERVATION LXXX.

Of the Corroſion of the Stomach healed.

IN the Year 1622. I opened the Body of a Monk at *Padua*, who was reported to have died of pains of the Colick: and ſearching after the cauſe of his death, I found that he had a burning inflammation in the bottom of the Stomach, which had corroded to the Middle Coat.

In curing the like inflammations, and corroſions of the Stomach: The moſt excellent *Spigelius* ſaith there is nothing better than Terra Sigillata taken in at the Mouth, the ſlimyneſs of which ſticketh faſt to the corroded Coat of the Stomach (no otherwiſe then as the Cerate of Diacalcitis applyed to an inflamed Foot.) And drieth up the Corroſions. The value of this Remedy I afterwards experienced to my great admiration in violent Pains of the Stomach, which could not be mitigated by any Remedies, inwardly or outwardly applyed: but with this Terra Sigillata mixed with the Syrup of great Comfry.

OBSERVATION LXXXI.

Of a Shin bone corrupted.

ON the 8*th.* of *June*, 1633. Ds. *Auguſtin Wotz* a Merchant of *Ulme*, complains of a large Ulceration and great pain of his right Leg, his body being extenuated, looking upon the Ulcer, we found not only the Shin-bone corrupted from the ſuperficies to the middle of it, but alſo the lower head of the fibula injured. Conſulting therefore with the moſt famous and eminent Dr. *Gregory Horſtius*, and Dr. *John Regulus Villenger*, we thought it fit that the Shin-bone ſhould be taken out; but ſeeing that the Body wanted Blood by reaſon of its extenuation, we doubted how we could bring it to Cicatrize again: and if we ſhould upon the Patients deſire, remove the corrupted part, by ſcraping or burning, yet we might attempt this in vain, if the nouriſhment were deficient which the bones receive from the Marrow, and Blood; for a bone ſcraped or burnt, without nouriſhment, can neither be covered with fleſh, nor throw off Skales; and therefore we unanimouſly conſented, that at that time, we could not conveniently cut out the corrupted bone: his Body being firſt prepared, upon the *6th.* of *July*, his Leg being placed ſtreight on and held by the ſtanders by, on each ſide, I cut the skin with an Inciſion Knife. *Tab.* II. *Fig.* II. Almoſt to the lower appendix, of the Shin-bone. *Tab.* XXVII. *Fig.* I. and ſhewed to my Colleagues and the ſtanders by, how the Shin-bone was very much corrupted, and half the Head of the Fibula putrified: Upon the Shin-bone there grew a Cartilage in ſuch manner that the bone under it might be drawn up and down as a Sword in a Scabbard. (*Tab.* XXVII. *Fig.* II. letter *A.*) and therefore I bound up the Wound with Lint,

The

The Aſtringent Pouder of *Galen*, and the white of an Egg ſtirred up. On the 7*th*. of *July*, the Blood being ſtopped I unbound the Wound, and ſhewed the corrupted Tibia in its cartilagineous ſheath. (Which I perforated with Trepans. *Tab*. II. *Fig*. III. & IV. Down to the corrupted Shin-bone. *Tab*. XXVII. *Fig*. I. letter *B*. And afterwards cut out the ſpace between the Holes with the Pincers. *Tab*. IV. *Fig*. II. & *Tab*. XX. *Fig*. I. This being done, I took out the corrupted Tibia, *Tab*. XXVII. *Fig*. II. and ſaw the corroded Head of the Fibula, *Tab*. XXVII. *Fig*. III. which I alſo cut off with the Trepan, and took away down to the lower Head. This done, I ſprinkled on the Pouder of long Birth-wort, Orice, and Chryſolite; and then applied Lint, the Cerate of Diapalma, and Linnen preſſed out in Red Wine, and Oyl of Roſes, I bound up the Leg with the divided Bandage, *Tab*. XXVII. *Fig*. I. Croſſwiſe, *Tab*. XXVIII. *Fig*. X. and put it into its Caſe, *Tab*. XXVI. *Fig*. III. The third day after the cutting it, the pain ſomewhat remitted, and the Patient being bound in his Body, made uſe of this following cooling and moiſtening Gliſter.

Take of
- The Decoction of Sorrel,
- Mercury,
- Pellitory of the wall,
- Borrage, and
- Sow-thiſtle, of each eight ounces.
- Solutive Hony of Roſes, three ounces and a half.
- Oyl of Violets two ounces.

Mix them for a Gliſter.

His Dyet was ſlender and cooling, of Barly Ptiſan, Bread and Water, Pruans, Barly-water, and Pomgranate Wine. On the 4*th*. day, I waſhed the Wound with the Decoctum Divinum, by reaſon of the remaining putrifaction of the fleſh, and applied Lint dipped in this Digeſtive.

Take of
- Turpentine waſhed in Plantain and Scordium water, half an ounce.
- Pouder of Orice,
- Long Birth-wort,
- Scordium of each one dram.
- Frankincenſe,
- Aloes, of each one ſcruple.
- Syrup of Red Roſes as much as ſufficeth.

Mix them into the form of a Digeſtive.

And over that the Cerate of Diapalma, and the Bandage wound up croſſwiſe.

On the 5*th*. day, I prercribed theſe purging ingredients.

Take of
- Maſtick Wood,
- Roots of Sorrel, of each three drams.
- Sarſa ſix drams.
- Leaves of Senna an ounce and half.
- Roots of black Mechoacan half an ounce.
- Turbith,
- Hermodactils of each two drams.
- Carthamum-ſeeds beaten ſix drams.
- Annis-ſeeds,
- Fennel ſeeds, of each a ſcruple.
- Crem of Tartar half an ounce.
- Ginger and Galanga, of each half a dram.

Being cut and bruiſed, infuſe all theſe put into a Bag in a meaſure of Barly-water, and make a Claret.

Of this infuſion the Patient took four ounces, every other day, three hours before Dinner. On the *6th*. after a draught of this the Patient was better, and the Leg being unbound, the matter tended to whiteneſs, and the ill ſmell of the Bone remitted; and therefore I bound up the Wound, or rather the Ulcer every day with the ſame Medicines, till the 12*th*.

His Body being purged from bad humours on the 13*th*. I preſcribed this following Decoction.

Take of
- Roots of Sarſa an ounce and half.
- China an ounce.
- Red Sanders half an ounce.
- The Bark of Guaicum a dram.

Infuſe them into a convenient quantity of Fountain-water, and boyl away the third part, in the end of the Decoction add an ounce of Raiſins, and ſtrein it out.

Of this Decoction he took morning and evening four ounces, four hours before Meat: at Dinner and Supper he Drank of the ſecond De-

Decoction. The Wound went on well, and we put a Wax Candle of the bigneſs of a Finger, into the Cavity of the Tibia, and Head of the Fibula: red fleſh began to grow at the extremities of the Shin-bone, both below and above; and laudable Quitter came out of the Wound. On the 15*th*. 16*th*. and 17*th*. The Patient went on well, and I drew out with my Pincers, a black piece of Bone, half putrified about the upper end of the Cavity. On the 20*th*. he took a Gliſter, to keep his Body ſoluble, the Wound ſent forth digeſted matter, and to the excrements of the Tibia, for the greater drying of them. I applied Pouder of long Birth-wort, Orice, Scordium, Frankincenſe, and white Sugar, of each equal parts. Red fleſh grew to the Head of the Fibula, and the lips of the Ulcer: for the greater drying of which, I applied the Ceratum Divinum. Upon the uſe of the Decoction preſcribed the Patient went on well, and the leanneſs of his Body was ſomewhat amended; yet every other day from the 24*th*. to the 30*th*. he made uſe of the Laxative Claret, and the Decoction of China.

On the 31*ſt*. I drew out ſome pieces of the Bone, with the Teeth of the Pincers, from the inward Head of the Tibia: for the excreſcence of fleſh of the Wound, I applied the Ceratum Divinum, and bound up the whole Leg with the divided Bandage, and put it into its caſe. The Wound was dreſſed with theſe Medicines, till the one and fourtieth day. From the 42*d*. to the 50*th*. The Patient was in good health, and moved his Inſtep, and the Bones of his Foot up and down: for the Muſcles which bend the Foot, as the Tibeus before, and the ſecond Peroneus, and thoſe which extend it; as the inward Gaſterocnemius remained unhurt in the operation; and leaſt any one ſhould wonder at it and, think this impoſſible to be done without a Prop; it is to be underſtood, that the Callus which was generated by this time, and the Fibula, did ſuſtain this motion. On the 60*th*. He paſſed the night unquietly, and complained of a bitterneſs in his mouth: upon which he took this following Pouder in Broth, in which Succory was boiled.

Take of

The beſt Rubarb powdered, three ſcrupls and a half,
Cinamon half a ſcruple.
Crem of Tartar one ſcruple.

Mix them.

From this he voided five times bilious matter, the Wound being unbound, the Patient was indifferently well, only a little Bone which Nature had ſeparated pricked the Skin; and that bone being drawn out he was very well. On the 70*th*. Nature expelled a very little Bone out of the hole of the Fibula; and filled up the hole with very

good fleſh. On the top and bottom of the Tibia red fleſh bred, and the ſides began to cicatrize.

On the 80*th*. The whole Wound was cicatrized the length of the Fore-finger, and he could move the whole Foot, and the Toes without any hindrance.

On the 81*ſt*. This following Oyntment was applied.

Take of,

Oyl of Earth-worms,

Oyl of Camomile, of each half an ounce.

Nerve Oyntment, and Oyntment of Eva, of each an ounce.

Mix them.

On the 84*th*. We gave order for an Inſtrument to be made out of a Plate of Iron, which on the upper part, was like to a Spatula, on the lower to a Stirrup, and was covered over with Cotton, and Linnen, and put on to the Leg; and the Patient leaning upon Crutches, began to walk. On the 94*th*. Laying aſide his Crutch, ſtaying himſelf with his left hand, he went out of doors without inconvenience: the Wound being ſtill open a Thumbs breadth, and not yet cicatrized: by reaſon of an Eriſipelas, to which he was ſubject; he took every month Pouder of Rubarb in Broth, in which Succory was boyled.

Take of-

The beſt Rubarb poudered one dram.

Jalap one ſcruple.

Crem of Tartar half a ſcruple.

Mix them.

On the 120 day he was well; but upon wearineſs his Leg was troubled with an Eriſipelas, and taking the Pouder of Rubarb preſcribed, and applying the Linimentum Simplex, the fourth day it went off, and the Patient walked again without a Staff; and ſo continued well, till the 200. When going into the Market to buy Fiſh, ſtepping I know not how, he broke the Callus of the Tibia. Looking upon the Fracture I dilated the Wound which was ſtill open, with the Inciſion-Knife, without any pain, and found two Fiſſures, between which there was a piece of a Fingers breadth, *Tab.* XXVII. *Fig.* V. broken ſo as I could move it up and down with a Probe. Things ſtanding thus, and there being no pain, or inflamamation: I perforated the broken Piece with the Trepan, and cut the ſpace between it with the Inſtrument, *Tab.* XX. *Fig.* I. and took it out piece by piece, and then ſcraped both parts of the Tibia, both above and below, with the ſcraping Irons, and applied Pouder of Birth-wort, and Orice, to the Calleus parts; I bound

bound up the Wound with the Cerate of *Diacalcitis*, and the divided Bandage, and placed the Leg in its caſe: ſo that keeping a very ſtrickt Dyet; and uſing the Pouder of Rubarb, the Callus grew again, and he was reſtored again to his former health; and in the Year, 1645. when I wrote theſe, could walk without a Staff.

OBSERVATION LXXXIII.

Of fleſhy Excreſcences.

FLeſhy Excreſcences on the Fingers and Toes are ſoon conſumed with this Pouder applied with Lint.

Take of
The Caput Mortuum of Vitriol,
Burnt Spunge, of each a dram.
Mix them into a Pouder.

And being taken away they may de cicatrized with the Ceratum Divinum. A young Man of eighteen years of Age, complaind of a great Excreſcence on the upper Gum, which after purgation, I cut off, by putting a Thread about it, tyed and drawn cloſe together by degrees. The fleſh being taken away the Patient rubbed his Teeth every morning for eight days with this Magiſtral Pouder, to an ounce of which, there was added a dram of Crude Alum.

Take of
Porcelan Earth four ounces.
Aloe Wood,
Yellow Sanders, of each an ounce
Musk a ſcruple.
Orice an ounce.
Mix them for a Pouder for the Teeth.
And waſhed his Mouth with the following Decoction.
Take of
Roche Alum two drams.
Pomgranate Flowers,
Red Roſes,
Myrtil, of each half a Pugil.
Bugle one Pugil.

Boyl them in a convenient quantity of rough red Wine, to a pint and half, and ſtreine it out, to waſh the Mouth.

OBSERVATION LXXXIII.

Of Kibes and Chilblains ulcerated.

I Have ſeen a great number of Kibes and Chilblains healed, and I my ſelf have cured very many, with this following Liniment, which *Johannes Prevotius* doth deſervedly commend in his Medicines for poor People.

Take of
The Leaves of Tobacco,
The middle Bark of Elder, of each a handful.
Roots of white Aſphodel thinly ſliced one ounce.
Common Oil one pint.

Boyl away the moiſture upon a gentle Fire, and preſs them out ſtrongly, to which add,
Frankincenſe finely poudered half an ounce,
Yellow Wax ſix drams.
Mix them into a Liniment.

Which preſently healeth ulcerated Kibes, or Chilblains, on the Noſtrils, Ears, Hands, or Feet.

OBSERVATION LXXXIV.

Of a Steatoma on both hands.

IN the Year, 1628. *Johannes* my Brother *Martin's* Son, had a little ſwelling, near his Fore-finger on the outward part of his left Hand, at firſt riſing appearing like a Ganglion; but I bound a Plate of Lead over it, without any benefit. In the Year, 1629. the Youth ſweat in a publick Bath at *Chriſtmas* time; and coming home

home was taken with a great inflamation all over his Hand; which being put into a warm Lambskin (which otherwiſe powerfully diſcuſſeth) came to ſuppuration, and required the operation with the Knife, *Tab.* XII. *Fig.* IV. The Abſceſs being duly opened, and a purulent and tallowy matter coming out, I incarnated the Wound, and healed it up. In *Autumne* the ſame Year, another Tumour appeared about the ſame place, but nearer to the Wriſt: which alſo degenerated into an Abſceſs to be cured by the Knife; which being cut, there came out in like manner Quitter mixed with Tallow, and the Wound was ſoon cured again, with Sarcotick, and Epulotick, Medicines. In 1630. About the Vernal Æquinox, there aroſe tallowy Tumours on the back of both Hands, which were inſenſibly diſſolved, without applying any thing to the part, upon the taking of a Sudorifick Decoction, whoſe chief ingredient was Sarſa. In the Year, 1631. Swellings aroſe on the Wriſts, and on both ſides of the back of the Hands, to the bigneſs of a Walnut, cauſing inflamation, and an Abſces; which, being opened with the Knife, caſt out the ſame matter as the former. In the Year, 1632. Theſe Tumours invaded both Arms, and therefore I adviſed a Cure by ſweating; which the Patient being difficult to ſweat, was totally againſt. Being ſuppurated, therefore I opened them with the Knife, and the matter coming away by degrees, I kept the Wounds open with Tents, for two months; in the mean time, waſhing the Hands every day, an hour, in the Water of the Stribiline well near *Ulme*; heated and bound them up with Spunges dipped in the ſame Water, till the reliques being diſcuſſed, the parts recovered their former ſtrength, by the help of this Water, the Youth out of whoſe Hands I had taken divers pieces of corupt Bones, and opened four and twenty Abſceſſes, was preeſrved from any further Relaps, and performs all Offices with his Hands, without the leaſt impediment; taking every three months a Pouder to purge Phlegm.

OBSERVATION LXXXV.

Of a Fracture of the Thigh-bone, with a Wound.

ON the 22*d.* of *October*, 1642. A ſack of Corn fell from the top of a high-houſe, belonging to the Worſhipfull Dr. *Erhard Schadæus*, at *Ulme*, and broke the Thigh-bone, of *Katharine Beckhin* of

of *Gingiva* as ſhe paſſed by, juſt in the middle, ſo that the lower part of the Bone broke through the skin; and the patient, with the great pain of her Thigh, and Back, fell into a Swound, and being brought into the Hoſpital her Spirits were recovered by inward and outward medicines.

Take of

Black-cherry water, three ounces,
Roſe water,
Burrage water, of each an ounce.
Cinamon water, two drams.
The Anhalt Cephalick Spirit, one dram.
Magiſtery of Corral half a dram.
Pearl Tablets, half one ounce.

Mix them

Put them into a glaſs, and call it the ſtrengthning water.

Take of

The ſweet ſmelling water of Fuchſius, one ounce.
Roſe water, half an ounce.
Rue Vinegar, two ounces.

Mix them, for a water, to be applipd to the noſtrills and pulſe.

And Extenſion of the thigh being made. *Tab.* XXIX. *Fig.* I. I ſet the broken parts without the help of the ſcraping Iron.

The Fracture being compoſed I applied to the broken bone, powder of the Roots of Orrice and round Birthwood: I put a tent into the Wound made of hemp hards and an aſtringent Oyntment, which I made of the aſtringent Powder of *Galen*, aud the white of an Egg ſtirred up. I bound up the Thigh outwardly with three rowlers and a ſufficient number of Plagets. ſee *Tab.* XXIX. And thus garded I put it into its caſe. *Tab.* XXVII. The member being thus well compoſed, by reaſon of the great pain of the whole leg and back, and the eminent danger of an inflammation, the Chyrurgion ro the Hoſpital opened the Median vein of the left Arm, and took away four ounces of Blood. On the 2*d.* and 3*d.* day, ſhe complained of a pain of the Back, and heat of Urine. On the 4*th.* and 5*th.* the Patient anſwered to what was asked, without complaining, but becauſe her body was bound, the ordinary Phiſitian to the Hoſpital preſcribed her ſome Bolus's to be made, out of an ounce of Lenitive Electuary, and while they were making up her courſes began to flow. On the 6*th.* 7*th.* and 8*th.* ſhe did not complain of any pain about the Fracture, only of a little Cough, and a great itching about the private parts; and therefore ſhe took often in a day Syrup of Violets, of Liquorice

and

and Tincture of Roſes mixed together: to the Back and private parts, for their itching, I applied after a Fomentation with ſalt water, white Oyntment and the Linimentum Simplex. On the 10*th.* day, I unbound the Wound, and bound it up again, with the Cerate of Diapalma perforated, and three rowlers paſſed through it: and a ſufficient number of Bolſters and Splents; The bolſters being firſt preſſed out in red-Wine. and by this means, upon occaſion, I could look upon the part every day, without taking off the rowlers; her lower Belly was very much ſwelled, and very hard from the Navel downward, to which I applyed, three days together, a Cataplaſm made of the Powder of Mallows, crums of Bread, Milk, and freſh Butter. On the 14*th.* the ſwelling and hardneſs decreaſed, and remitted. The Patient upon an Abſceſs coming to ſuppuration in her Buttock, complained of a Strangury and very ſharp pain about the Os Sacrum. On the 20*th.* the Abſceſs being broken and the Ulcer cleanſed, the Strangury and pain went away, but becauſe the Ulcer on the Buttock did require dayly applications, the broken part could not be kept in reſt till the 30*th.* day, at which time the Patient complained of nothing. On the 40*th.* a new Abſceſs aroſe under the Ham, which coming to ſuppurate, was very painfull, and upon breaking caſt out a very ſtinking matter, and therefore I injected, through a ſiphon, a Decoction of the Roots of Orice, round Birthwort, Scordium, Speedwell, Carduus, and Hony of Roſes; upon which the Violent pain and ſtinking ceaſed. I dreſſed the Fracture again with Medicines convenient for the Bone and Wound, with the Cerate of Diapalma, with rowlers with holes through them, and long bolſters, and ſplents. On the 60. ſhe complained of ſo great a pain about the Wound that ſhe could ſcarce ſpeak without ſheeding of tears; and ſaid that for divers Nights ſhe had ſeen a Spirit which was falſly reported, to walk in that Cloiſter, and that it cauſed her whole Body and the Bed to ſhake, and was the cauſe of her pain, but I ſuppoſe, that the pain took its Original partly from the Ulcer on the Buttock, which was cleanſed every day and ſo moved, diſcompoſed and troubled the broken part: and partly from a Portion of the Bone, which in ſuch caſes, uſed to Skale off about this time. On the 18. of *January* 1643. ſhe complained of terrible pains about the Wound on the Thigh, and unbinding it, and looking upon the Wound, I found out with my Probe a ſharp peice of Bone, which continually pricked the fleſh, and excited theſe great pains; therefore I preſently dilated the Wound ſufficiently with my inciſion Knife. And on the 19*th.* I took hold of that part of the bone which was ſeparated with the teeth of my pincers and drew it out. *Tab.* XXVIII. *Fig.* IX. On the 20*th.* day, the whole Thigh was leſs than the days before, and the pricking pain intermitted. After the taking away of the Bone, I bound up the thigh with the

croſs

croſs bandage. *Tab.* XXVII. *Fig* X. Untill the Wound was perfectly healed. In the Month of *February*, The Ulcer of the Ham not being yet conſolidated, the Patient by help of an Iron inſtrument, began to walk, a little halting. On the 18*th*. of *March* 1645 A part of the Bone as big as the Ring-Finger came away. On the 3 *d*. the Ulcer was Cicatrized.

OBSERVATION LXXXVI.

Of a Spina Ventoſa.

THE moſt excellent *Spigelius* cut off the Thumb of the left hand, a certain Monk of *Bolonia*, it being corrupted with a Spina Ventoſa, with the Pincers deſcribed. *Tab.* XX. *Fig.* I. And applied to the Mutilated part to ſtop the blood, and hinder an inflamation, Plegets dipped in an Aſtringent, and a Bladder dipped in Water and Vinegar, and bound the Arm up with Rowlers, as high as the Elbow. The blood being ſtopped, he cleanſed the Ulcer, and healed it.

OBSERVATION LXXXVII.

Of a broken Leg with a Wound.

AT ſeven of the Clock on the 5*th* of *December*, 1643. In the evening, *Matthew Ritter Junior*, fell out of a Gallery, and broke his left Leg, four Fingers bredth, above the lower end; with a Wound laying the Bone bare, and a prominence forward. The Leg being ſet by extenſion only; the pain which was very violent before, did preſently abate. I bound it up with three Rowlers, *Tab.* XXIX. *E. F. C.* And with Boulſters the ſame Table *H.* and placed it duly in its Caſe, *Tab.* XXVI. *Fig.* II. In binding it up, the Patient being faint, took oftentimes a ſpoonful of this Cordial Water.

Take

Take of
Black Cherry-water two ounces.
Burnet-water,
Roſe-water, of each an ounce.
Cinamon-water a dram.
The Anhalt Cephalick Spirit, half a dram.
Magiſtery of red Corral poudered half a dram.
Prepared Pearl one ſcruple.
Prepared Chryſolite half a ſcruple.
Pearl Tablets three drams.
Mix them and put them into a Glaſs.

On the *6th.* of *December*, the pain of the Fracture, upon the uſe of remedies, went quite off; and the Patient went on well to the fourth day of his lying down. On the *9th.* The Wound being unbound and inſpected there was no ſign of any inflamation, or pain; and therefore I applied to the Bone of the Tibia, dry Lint, and to the lips of the Wound, a Digeſtive.

Take of
Turpentine waſhed in Plantain-water, half an ounce.
Pouder of the Roots of long Birth-wort,
Orice, of each two ſcruples.
Syrup of Red Roſes two drams; and
As much yolk of Egg, as ſufficeth.
Mix them
And over it the Cerate of Diapalma, and Rowlers, and Splents.

On the *10th.* day, the Patient made uſe of a Laxative Gliſter, and went on well, till the ſeventh day of his lying down.

On the *13th.* The Wound being unbound, there appeared good digeſted matter, without pain, or inflamation; which otherwiſe are wont to accompany theſe Fractures, and therefore I continued to dreſs it with the ſame Medicines; Cerate, Bolſters, Plagets, Splents, becauſe the time of fearing an inflamation was paſt; and placed it in its Caſe, *Tab.* XXIX. *Fig.* VI. On the *16th.* The Wound being again unbound and looked upon, all things went on well, not any pain or Tumour appeared; and laudable matter, and in a ſmall quantity, came out of the Wound; and therefore I ſprinkled upon the Bone which had loſt its membrane, a Pouder of the Roots of long Birth-wort and Orice, I applied to the Wound a Sarcotick, and bound up the Leg again with the Diapalm, the Rowlers, Boulſters, and Splents. This day he played at Cards, and moved the Caſe up and down, and diſtorted the the whole Shin-bone to the

left

left. On the 17*th*. In the morning, he complained of the Caſe preſſing upon the outward part, under his Knee, below the Head of the Fibula; and looking upon the Leg, I found an Extuberance, and therefore unbinding the Wound, I touched it, and perceived a Fracture of the Fibula, which without doubt Nature would have Conſolidated, if he had kept his Leg always unmoved.

On the 20*th*. I applied an Iron Plate, that it might ſomewhat drive in the Extuberance of the Fibula towards the Tibia, which it did, but I foretold that a piece of the Bone would come away. I put upon the Fractured Tibia which went on well; the Pouder of Orice, with dry Lint, and put the whole Leg into its Caſe, being bound up with the Cerate of Diapalm, the Rowlers, Boulſters, Splents. On the 25*th*. The Patient complained of the Fracture of the Fibula; which being looked upon, I found a Bone which did ſomewhat prick the Skin, and therefore I drew the Cerate, Bandage, and Boulſter, ſomewhat to the right, to provide againſt the pain, cauſed by the pricking of the Bone. On the 6*th*. of *January*, 1644. The Fractured Tibia began to be confirmed, and the little Bone of the Fibula came in ſight; to which I applied the Pouder of Orice, and long Birth-wort with Lint; and bound up the Leg, with the Cerate of Diachalcitis, the Boulſters, Iron Plate, and Rowlers: that the Leg might acquire its former ſtreightneſs. On the 16*th*. of *January*, I applied to the Wound of the Tibia, Lint, Diapalma, the Rowlers, Boulſters, and Splents. The Fracture of the Fibula ſent forth white digeſted matter, I took out a little ſharp Bone with the Pincers, and bound up the Leg, as the days before. On the 5*th*. of *February*, Nature had ſeparated a little Bone of the Fibula; and the fleſh began to grow: therefore I bound up the Ulcer ſlackly, with Lint, The Ceratum Divinum, and the Rowlers, and put the Part affected into the Caſe. On the 25*th*. For an excreſcence of fleſh, I ſprinkled Pouder of burnt Alum upon the Ulcer; which being conſumed: *March* the 4*th*. I drew out another piece of Bone, and dreſſed the Ulcer with dry Linnen, and the Cerate Divinum; and placed the whole part, bound up as the days before. On the 24*th*. Upon irregular Dyet, the matter was green, and the Ulcer ſpread it ſelf; and therefore I ordered this Laxative Wine.

Take of
The Roots of Graſs,
Of Orice, of each a dram and half.
The Leaves of Betony,
Speedwel,
The leſſer Centaury,

Boy-

Borage,
Worm-wood, of each half a Pugil.
Senna one ounce.
The beſt Rubarb three drams.
Trochies of Agarick two drams.
Hermodactils,
Turbith, of each a dram and half.
Carthamum-ſeeds beaten two drams and a half.
Anis-ſeeds,
Fennel-ſeeds of each half a dram.
Crem of Tartar three drams.
Ginger,
Galanga, of each a ſcruple.

Being cut and bruiſed put them into a bag, to be infuſed in a meaſure of Wine, the Patient took of this infuſion every other day, two hours before dinner, three onnces and a half. Upon the uſe of this Wine. The Patient grew better, the Ulcer generated digeſted matter, white, and not in the leaſt ſtinking. On the 14*th.* of *April*, the Patient was very well and the Wound coming to Cicatrize, he began to walk by the help of Crutches. On the 4*th.* of *May*, the Patient very joyfully laid aſide his Crutches, and walked without halting.

OBSERVATION LXXXVIII.

Of an Atheroam on the outſide of the Legg, cured.

MArgaret a Noble Virgin whoſe ſirname for honour ſake I omit of about thirty Years of Age, of a hot and dry temperament, complained eleven Years of a hard tumour without pain, bigger than a Hens Eeg; on the outſide of the right Thigh between the Muſcle called the Glutæus and the skin; and this Tumour being contained in a Coat; it would not yield either to outward or inward remedies; giving my Prognoſtick therefore that this Tumour could not be cured without manual operation, I firſt prepared and purged her Body. And on the 26*th.* of *May*, 1641, I took out the tumour after this manner. Firſt I made a croſs upon the skin with Ink, and the Ink being dried I cut the skin upon the marke into four right Angles. *Tab.* II.

II. *Fig.* I. Till the bag come in ſight. The ſkin being cut croſſ-wiſe, and the Blood wiped away with a Spunge. I ſeparated the four corners of the skin with my Probe from the Coat of the tumour under them, to the baſis, where there was a vein which I cut in pieces; and drew out the whole tumour in its coat with the Pincers: the bag being taken away without any hurt: I preſently brought the lips of the Wound to touch one another, and applied the white of an Egg ſtirred up, with the aſtringent Powder of *Galen*, the wound being bound up, I diſected the bag, and found a matter contained in it, like to Pap. On the 28*th*. of *July*, the Wound was Cicatrized, and the Patient reſtored to her former heath.

OBSERVATION LXXXIX.

Of a Wound on the Wriſt hurting the Artery.

IN the Month of *December*, 1631. *John Moſer* a Taylor, of about twenty four years of Age, of a hot and moiſt Temperament, was Wounded with a Knife, by his Man, upon the Wriſt and Radius of the left Arm: ſo that not only the Vein, but the Artery alſo was cut croſs. Upon which, a Flux of blood followed, and other cruel Symptoms. This Wound *Nicholas Reutte* a Chyrurgion did preſently bind up, according to Art. The ſecond day, it bled ſo copiouſly, that for want of Vital Spirits, his whole Body was ſhaken with convulſive motions. Towards night, he took a Lenitive Gliſter, which gave him three Stools. On the 3*d*. day, the Liver Vein of the right Arm was opened, and four ounces of blood taken away. On the 4*th*. when the Wound was dreſſed, no blood came out. On the 5*th*. For a bitterneſs of his mouth, the Patient uſed this following purging Syrup.

Take of

Solutive Syrup of Roſes two ounces and a half.
Extract of Rubarb one dram.
Diacarthamum a dram and half.
Crem of Tartar half a dram.
Succory-water as much as will make them into a Liquid Syrup.

This gave him two Stools. On the 6*th*. day, he complained of pain

pain at his Stomach, and Giddineſs; and therefore took Syrup of the Juice of Citrons, mixed with Pomgranate Wine, Burnet-water, and black Cherry water; in faintneſs he found relief from the uſe of Pomgranate Wine. On the *7th.* He was unquiet all night; and ſaid, he had been fighting with the young Man, who Wounded him; and then complained of the charges, and was ſo melancholy for them; and diſturbed: that he ran upand down about the Chamber. Upon which the blood boiling ſprang out of the wounded Artery, ſo violently, that it could by no means be ſtopped; And therefore, compreſſing the Arteries wtih my Fingers, I took out a great quantity of concreted blood out of the Wound, about the middle part of the Radius. At length, I applied to the wounded Artery, a burnt Spunge, and Pouder of prepared Chryſolite, and the Aſtringent Pouder of *Galen*, with the white of an Egg; and bound it up with a convenient Bandage, and put into it the Inſtrument made of a Plate of Mettal, *Tab.* XLIII. Letter *B.* Which is to be Locked, and compreſſeth the Artery with a Screw, without any danger, or inconvenience. On the *8th.* & *9th.* days, his Arm to the middle part of the Cubius, and Radius, was inflamed; and in the evening took a Gliſter. On the *10th.* day he was better, and yellow matter iſſued through the Rowlers. On the *11th.* he ſlept well all the night. On the *12th.* the Wound being unbound, white matter flowed out; and the Wound appeared larger, by reaſon of the concreted blood taken out, as in an Aneuriſm, and the putting in of the Spunge. The Tendons of the Muſcles, called Perforantes, came in ſight, inflamed, painful, and tending to putrifaction. The Wound therefore being cleanſed, without taking out of the Spunge, I applied the former remedies to the Artery; and the Wound being bound up with the Bandage, I ſhut it up with the Pin of the Inſtrument. In the mean time, cooling, and moiſtening Syrups were not omitted: Emulſion, of Waters, and appropriated Seeds, Magiſtery of red Corral, and Syrup of Violets.

On the *13th.* and *14th.* The Patient was ſomewhat better: for the inflamation, and pain, of the wounded Arm, ſomewhat abated. On the *15th.* day, White matter came out of the Wound, the pain of his Hand ſeemed more remiſs, and the ſwelling was leſs, the Tendons recovered their natural heat. On the *16th.* I pulled out half the Spunge, which ſtuck to the Orifice of the wounded Artery, with my Pincers; and left the other half ſtill in the hole. On the *17th.* I drew out the reſt of the Spunge, and applied to the Wound the former Medicines; and the yellow Cerate covered over with the Linimentum Simplex; to the Wriſt bound up conveniently, I put on alſo the Inſtrument. On the *18th.* I found the Oriſice of the Artery conglutinated, and the Tendons covered with

ſolid fleſh. On the 24*th*. The Wound being conſolidated with the Ceratum Divinum, the Patient was reſtored to his former health.

OBSERVATION XC.

Of a Concuſſion of the Brain.

IN the Month of *November*, 1627. *John Semlin*, of *Oppingen*, near *Ulme*. A Country-man's Servant, of a hot and moiſt Temperament, a month before, was in *Mark Feyels* Houſe; in which the Maids and young Wenches were Spinning, and doing their Tasks. This *John* at that time, was playing with ſome of the young Maids, and the reſt called to him to leave his tricks. In concluſion they ſet him upon his Head, with his heels upward; and then turned him over ſuddainly again, and then ſhaked the Ground with his Head again; which they did ſo often to him: that the blood came out of his Noſe and Ears; and he fell down upon the Ground, as dead. The young Wenches ſeeing him in this doubtful condition, ſprinkled Water upon his Face, to recall his Spirits; which being done, he ſtood up, as if he had riſen from the dead, and went away with a great pain of his Head and Arm. The 2*d*. day, notwithſtanding the pain of his Head and Arm, he Fanned Corn. The 3*d*. & 4*th*. He was worſe; ſo that, by reaſon of a Feaver, and Convulſive motions he was forced to keep his Bed. On the 6*th*. day, He went in a Cart to *Oppingen*. On the 7*th*. His Mother ſent for Chyrurgions. On the 11*th*. 12*th*. 13*th*. & 14*th*. He was troubled with his Convulſive motions. On the 15*th*. His Mother ſent his water to the eminent Dr. *Kaleb Sattelius*, an induſtrious Phyſitian of *Geſlingen*: who preſcribed the Powder againſt inward bruiſes, to diſſolve the grumous blood, with Syrup of Wood Sorrel, Juice of Citrons, and Burnet Water. Afterward, he was dumb, and deaf; and was under a Coma, till the 24*th* day. Of which loſs of ſpeech, *Hippocrates* in the 58*th*. Aphoriſm of the 7*th*. Section, doth thus foretell. *Whoſoever have their Brains, upon any occaſion, violently ſhaken, they will neceſſarily become dumb.* A looſneſs followed his loſs of ſpeech, and hearing, which laſted three days; at which time, he could hear others ſpeak, and ſpake himſelf, and complained of a great pain of the left Arm, about the Deltoides Muſcle. On the 29*th*. By order from

from the Republick of *Ulme*, I went to *Oppingen*, where I found *John* very much complaining of a great pain of the Head, about the Coronal, and Sagital Suture, thirſt, a great Feaver, heat, and blackneſs of his Tongue, a Palſy, Odematous, and Schirrous Tumour, all over his Arm, which much afflicted the Patient; and about the Deltois Muſcle tended to ſuppuration, whereupon I preſently for revulſion ſake, preſcribed this Glyſter.

Take of
The common Decoction for Glyſters, nine ounces.
Hony of Roſes ſolutive, two ounces and a half.
Diacatholicon, one ounce.
Oyl of Cammomile, two ounces.
Mix them, for a Glyſter.

With this the Patient voided five times bilious and ſerous excrement

To the top of his Head being ſwelled, I applied this ſtrengthning and digeſting Cataplaſm.

Take of
The crums of Houſhold-Bread, three ounces.
Wheat meal.
Barly meal, of each two ounces.
Flowers of Betony powdered.
Roſes powdered, of each half an ounce.
Oyl of Roſes, three ounces.
Red Wine a convenient quantity.
Common ſalt a dram.
Mix them, upon the fire into the form of a Cataplaſm.

To the Tumour on his right Arm, there was applyed a Cataplaſm made of Houſhold bread, Meal, of Flax-ſeeds, Mallows, Marſh Mallows and Oyl of Cammomile. For his thirſt he uſed.

Syrup of the juice of Citrons.
Of Wood Sorrel.
Pomgranates of each two ounces.
In Barly water.

Morning and Evening he drank a diſh of Clarified whay made of Goats Milk: his meat was boyled Barly, and a Panada, made of the Crums of Bread, Meat-broath, and Butter, his drink at meals was Barly-water. The matter in his Arm, after ſome days coming to ſuppuration eaſily to be perceived by the touch, I opened the Abſceſs with an inciſion Knife, between the Biceps and Deltois Muſcle; and

a great quantity of purulent matter flowed out, I applyed to the Orifice which was cut, to mitigate the pain, a tent dipped in the yolk and white of an Egg, and over it Diachylon ſimplex to ſuppurate the relicks, the next day the Wound being unbound, I ſearched the Ulcer with the Globular end of the Probe, and found the Shoulder-bone corrupted, therefore I dilated the hole ſomewhat with a twiſted Spunge and put in a Tent covered with this digeſtive.

Take of
- Turpentine waſhed in Scordium water, two drams and a half.
- As much of the Yolk of an Egg.
- Pouder of round Birthwort.
- Orrice, of each half a dram.
- Hony of Roſes ſtreined, a convenient quantity.

Mix them.

In the mean time his body wes purged with theſe following ingredients.

Take of
- The roots of Polipody of the Oak, two drams.
- Orrice Roots.
- Succory Roots of each two drams and a half.
- Leaves of Agrimony.
- Betony
- Speedwell.
- Selfheal.
- Wormwood, of each half a pugill.
- Senna without the ſtalks an ounce and a half.
- The beſt Rubarb, half an ounce.
- Freſh Trochies of Agarick three drams.
- Carthamum-ſeeds picked half an ounce.
- Aniſe ſeeds.
- Fennel ſeeds, of each half a dram.
- Creme of Tartar three drams and a half.
- Cinnamon.
- Ginger, of each half a dram.
- Raiſins, three drams.

Being Cut and Bruſed put theminto a ſack and infuſe them in four Pints of water, and hony; of which he took every other day four ounces, two hours before dinner: for the greater drying of the Bone, I injected by the ſiphon the Decoction divinum, Powder of round Birthwort and Flower-de-luce of Florence; outwardly I divers times bound on a Spunge dipped in Salt-water and Red-wine, and preſſed out.

On the 20*th.* day, for the pain of his Head he uſed theſe following Pil.

Take of
The Maſs of Pilulæ Aureæ two ſcruples.
Extract of Cochiæ Pills, one ſcruple.
Magiſtery of black Mechoacan, ſeven Grains,
With Syrup of Betony, make them into ſmall Pills, and guild them.
Which gave him ten ſtools.

On the 60*th.* I took hold of a piece of the Bone thruſtout, and drew it forth with the Pincers, and afterwards Cicatrized the Ulcer.

OBSERVATION XCI.

Of a Hand cut off for a Spina Ventoſa.

WHen I ſtudied Phyſick at *Padoa* and practiſed Chyrurgery, a Gentleman who was a ſtudent there was, troubled for ſome Months with an Oedema on the left hand, which upon the uſe of very good outward and inward Remedies, was not at all diminiſhed, but began to be Ulcerated in the palm of the hand: and therefore we called into conſultation the moſt excellent *Spigelius*, who after he had ſearched the Ulcer with a Probe, and touched the corrupted Bone, he preſently pronounced it a Spina Ventoſa, which is an incurable diſeaſe, and requires the amputation of the part effected, it proceedeth from an humour, which by its hidden and Malignant quality, corrodes the Bones without any hurt or pain to the perioſtium, and then cauſeth an Oedematous tumour, which is not painfull, but after ſome Months Ulcerates the part, having obtained leave of the Patient, I cut off the hand above the ends of the Cubitus and Radius, with a hooked Knife and a Saw. *Tab.* XXVII. *Fig.* XI. XIII. & XIV. And having bound up the Arm, with Bolſters, a Bladder, and Rowlers, *Tab.* XXVIII. *Fig.* I. II. III. IV. I found in the hand which was cut off, the Bones of the Metacarp corrupted, but ſtill covered every where with the Perioſtium, except in that place where the Ulcer was.

OBSERVATION CXII.

Of a dangerous Wound on the Arm.

ON the *24th.* of *June* 1638. On the Feaſt of St. *John Baptiſt*, at ſeven of the Clock in the Evening, the Noble *Frederick*, of *Degenaw*, was Wounded in a Duell by the moſt Noble *D. N.* of *Betenderff*, two fingers breath below the bending of the right Arm paſſing through and through the whole Arm, between the Cubitus and the Radius, hurting the veins, and tendons of the Muſcles: with great pain and flux of Blood: the firſt day it was dreſſed by no unskillful Chyrurgion, *Johanes Georgius Bauler.* On the ſecond day before and after the unbinding of the Rowler, the Patient complained of a moſt Violent pain as well inward as outward, about the Orifice of the Wound, as is uſual in all Wounds of the Joynts, and for revulſion ſake he uſed this following Glyſter.

Take of
Lenitive Electuary one ounce.
The Emollient Decoction eight ounces.
Electuary of the Juice of Roſes two drams.
Oyl of Cammomile.
Oyl of Violets, of each an ounce and a half.
Mix them, for a Glyſter.

And had two ſtools. Three Hours after the Glyſter came away, the Median vein of the left Arm, was opened, I put a ſmall tent of Linnen into the Orifices of the Wound covered with a Medicine, of which this is the deſcription.

Take of
Aloe of Zocotora.
Frankincenſe.
Bole Armenick.
Lapis Hæmatitis.
Prepared Chryſolite, of each half a Dram.
Terra Lemnia.
Prepared Tuty, of each two ſcruples.
Dragons Blood, a dram.

Powder

Powder theſe, and Mix them, with the white of an Egg into the form of an Oyntment.

I anointed the Arm with Oyl of Roſes, and Oyl of Earth-Worms warm, and bound it up with Bolſters, preſſed out in Red-Wine, and a double headed Rowler; and applied to the top of the Shoulder the defenſive Oyntment of *Fernelius*, which is the beſt of any: and after two hours ſprinkled all the Arm over with Vinegar and water mixed: his drink was Barly water made pleaſant with Pomegranate Wine. His Meat was Barly boyled and Calf-Foot gelly. On the third day the Patient was better, and the Wound for fear of a new flux of Blood, was not unbound, but the whole member beſprinkled as before and anointed with the former Oyls. The fourth day, I unbound the Rowlers, but took not the but Tent out of the Wound, but applied Lint covered with an Oyntment made of the white and yolk of an Egg, and the forementioned Powder, I anointed the Arm and uſed a Bolſter dipped in Red-wine and the rowler. In the evening the Patient was better, and had for his ſupper Cream of Barly dreſſed with Endive, Pomgranate Wine, and Oyl. On the *5th* the Patient complained of nothing, I unbound the Wound, and took out the Tent, the Blood being ſtopped, I covered a ſhorter Tent with the Yolk of an Egg, beſprinkled with the former Powder, and put it into the Orifice. I applyed a defenſative to the Armpit and to the top of the Shoulder, and anointed the Arm with Oyls and bound it up with wet Linnen and the two headed Rowler. On the *6th.* the Patient being bound, and having a pain about the bending of the Arm took this Lenitive Syrup.

Take of
Solutive Syrup of Roſes, two ounces.
Caſſia newly drawn, one ounce.
Citron ſeeds Powdered, half a dram,
Succory water, as much as ſufficeth.
Mix them, and make a Liquid Syrup.

With this he voided five times bilious and ſerous matter, the Wound was dreſſed as the day before. On the *7th.* a little digeſted matter, appeared about the Wound, and therefore I added a halt part of Frankincenſe to the Oyntment for ſtopping Blood, that fleſh might grow in the Wound.

Take of
The Powder before deſcribed.
Frankincence, of each half a dram.

Of the yolk of an Egg, as much as ſufficeth.
Mix them into an Oyntment.

In which the Tents are to be dipped. From the 8*th* to the 10*th*, The Patient went on evry well. On the 11*th*. He ſaid, that he had not ſlept the night before; and by reaſon of his inquietude, he had moved his Arm up and down, ſo as ſome blood came out of the outward Orifice. The blood being ſtopped, I dreſſed the Wound, as the day before; and ordered the Patient this following Purging Syrup.

Take of
Solutive Syrup of Roſes two ounces and a half.
Extract of Rubarb a dram and half.
Magiſtery of Tartar one ſcruple.
Black Cherry-water, as much as ſufficeth.
Mix them into a Liquid Syrup.

On the 12*th*. 13*th*. & 14*th*. The Patient ſlept very well, and complained no more of pain in the bending of the Arm; and the outward Orifice, which upon the motion of the Arm had bled, did now generate Digeſted matter. On the 16*th*. Inſtead of the Tent, I applied dry Lint, and bound on a new Spunge, dipped in red Wine hot, and preſſed out, with the Rowler with two Heads. On the 19*th*. I Cicatrized the Orifices.

OBSERVATION XCIII.

Of a great Excreſcence on the Thigh.

Johannes Ferber of *Hamburg*, a *Swediſh* Souldier, about the 24*th*. Year of his Age; had a ſwelling aroſe in the inward part of his right Thigh; which in the ſpace of two years, grew to ſuch a bigneſs: that it was as big as three Mens Heads, and hindred his going. This Excreſcence, a certain Empirick, corroded with a Cauſtick, that the matter might get out, deſigning afterwards to Conſolidate the Ulcer; but finding no fluid matter, the Empirick fled away, and left the Patient deſtitute of all help. In the Year, 1634. The Patient came to *Ulme*, and deſired help of *Johannes Georgius Bauler*, a Chirurgion; who when he could not Conſolidate this foul Ulcer, with

with any Medicines. By my advice, and the advice of *George Riedlin*, he took hold of the painful ulcerated ſwelling, with the Pincerrs, and cut it out with a Knife red hot, and the Eſchar coming out, the Ulcer was fairly Cicatrized with the Ceratum Divinum, ſee, *Tab.* XXXV. *Fig.* II. Looking into the ſubſtance of the ſwelling cut off, which was fleſhy and full of Veins, and Arteries. We enquired of the Patient, whether he were naturally ſo lean, or no? he anſwered, that before the riſing, and encreaſe of this ſwelling, he was rather full bodied, whereby we were informed, that this ſwelling had received, and detained, moſt of the Aliment, which ſhould have nouriſhed the whole Body. Being recovered and about to leave *Ulme*, I adviſed him to uſe a ſlender Dyet; and every month to apply ſix Cupping Glaſſes to his Back, with ſcarification: till by degrees, the habit of the Body might be accuſtomed to aſſimulate the blood to it ſelf, which before Nature was accuſtomed to tranſmit for the nouriſhment of the Tumour. The young Man obſerved theſe directions diligently for half a year, and lived in good health to the Year, 1644. At which time, being in the *Bavarian* Army, he viſited me, and gave me many thanks for my advice.

OBSERVATION XCIV.

Of a Gun-ſhot Wound with a broken Leg.

ON the 31*ſt.* of *May*, 1644. About ſix in the evening *Leonardus Henſeler* a Heards-man of *Ulme*, was wounded with a Leaden Bullet; which did not only break his left Leg a little below the Knee, ſo as the Bone ſtuck out of the Wound, but went through the right Leg alſo, without hurting the Bone. Things being thus, at the firſt viſit, for want of other Medicines, theſe following were applied. I injected with a Siphon into the Wound of the right Leg, Oyl of Violets, mixed with the white of an Egg, and put in ſmall Tents, done over with the ſame Medicine; over that I applied the Cerate of Diapalm, and a Cataplaſm made of Barly-Meal, Mallows-meal, White-bread and Milk, and the Rowler with two Heads. Then I ſet the left Leg, as well as it was poſſible, and poured in the white of an Egg, and Oyl of Violets, ſhaken up together; and put into the holes Tents of dry Linnen wreathed, and over that, Diapalm, and the for-mentioned Cataplaſm, and bound it up with the di-

divided Bandage (*Tab.* XXVII. *Fig.* I. & *Tab.* XXVIII. *Fig.* X.) and placed it in a Caſe. On the *1ſt.* of *June*, I cut off a piece of the Bone, which pricked the skin, and made the Patient unquiet all night, with the Pincers, *Tab.* XX. *Fig.* I. And the Bone being cut off, I cut down the ſpace between the holes with the Syringotomus, (*Tab.* XIV. *Fig.* II C. and filled up the Wound, which was thus Dilated, with this Digeſtive.

Take of
Turpentine waſhed in Plantain-water three drams.
Oyl of Earth worms a dram and a half.
The yolk of an Egg.
Hony of Roſes ſtreined as much as ſufficeth.
Mix them for a Digeſtive.

Take of
Roots of round Birth-wort.
Orice, of each a dram and half.
Mix them into a Pouder.

I ſprinkled this Pouder upon the Bones, and applyed dry Lint, but to the Fleſh the Digeſtive; then I covered the lips of the Wound, with the Cerate of Diapalm, and bound up the Leg with the Cataplaſm, and the divided Bandage, and then placed it in the Caſe. In the mean time the Patient, by reaſon of his fainting took often a ſpoonful, or two of this Cordial-water.

Take of
Black Cherry-water two ounces.
Borage-water,
Roſe-water, of each an ounce.
Cinamon-water two drams.
The Anhalt Cephalick Spirit half a dram.
Magiſtery of red Coral two ſcruples.
Pearl Tablets half an ounce.
Mix them.

For his thirſt, I preſcibed this cooling Syrup.

Take of
Syrup of Vinegar,
Syrup of ſharp Pomgranates,
Syrup of the Juice of Citrons, of each an ounce and half.

with

with which he mixed the Barly-water ordered for his Drink: then for the preſent pain, and for fear of an inflamation, he took a cooling and moiſtening Gliſter: which being come away, a Chyrurgion opened the median Vein of the right Arm, and took away ſix ounces of blood. On the 2*d.* of *June*, the Patient was ſomewhat better. On the 3*d.* of *June*, having reſted ill the night before, by reaſon of another piece of Bone, which very much pricked the fleſhy parts. I cut that out alſo, and ſprinkled upon the Bone remaining, the former Pouder, and applied a Digeſtive to the lips of the Wound. The Patient the ſame day, upon his being bound, and a great Flux of humours to the wounded part, took this purging Potion.

Take of
Syrup of Roſes two ounces,
Lenitive Electuary ſix drams.
Electuary of the Juice of Roſes a dram and half.
The Decoction of the Flowers and Fruits, as much as ſufficeth.
Mix them, and make a Potion according to Art.

With this he voided five times bilious and ſerous matter. On the 4*th.* day, he was better than the day before. On the 5*th.* he complained of the Cholick, and therefore I gave him two ounces and a half of Oyl of Almonds, in a Decoction of Flowers of Camomile, and the pain ceaſed. On the 6*th.* his Belly being bound, he took the Potion laſt preſcribed; after the working of which, he ſlept very well. On the 7*th.* when the Eſchar was fallen off, I bound up the Wound with a Digeſtive without Oyl; and inſtead of the Cataplaſm, I wrapped up almoſt the whole Leg, in the Cerate of Diapalm, with holes made in it; and with the divided Rowler. On the 8*th.* I applied this following Digeſtive to the Wounds.

Take of
Turpentine waſhed in Scordium water three drams.
Roots of Orice poudered,
Round Birth-wort of each a dram.
Aloe,
Myrrhe,
Olibanum,
Bole-Armenick prepared, of each a ſcruple.
Balſom of *Peru* one dram.
Syrup of Red Roſes, and
Hony of Roſes ſtreined, of each as much as ſufficeth.
Mix them into the form of a Liniment.

On

On the *9th.* The Patient as to his Leg, was well; but at the ſame time complained of the Chollick, which ceaſed after a ſpontaneous evacuation of the bilious matter, by reaſon of the ſtinking of the Wound, I injected the Decoctum Divinum.

On the *10th.* The Patient was better, and the Wound in the left Leg ſent forth Digeſted matter. Under the Tibia I obſerved a ſmall putrid piece of Bone, which I waſhed with the Decoctum Divinum, and covered with the Pouder; and then bound up the wound with the Liniment preſcribed, and the Cerate of Diapalm. From the *15th.* to the *30th.* The Patient went on well; at which time, the Bone in the Superficies of the left Leg ſcaled off on the outſide of it. The Wound on the right Leg began to Cicatrize. On the *27th.* of *July*, I drew out a piece of the ſeparated Bone with the Pincers: The Wound on the right Leg was Cicatrized. On the *15th.* of *Auguſt*, upon irregular Dyet, he complained of a great pain of the left Leg, two Fingers breadth above the Knee; the Wound being unbound, I found an Abſceſs, which, upon preſſing with my Finger, ſent forth a great quantity of matter. On the *26th.* The Patient took this Pouder, for a bitterneſs in his mouth.

Take of
The beſt Rubarb a dram,
Crem of Tartar half a dram.
Black Mechoacan one ſcruple.
Mix them into a Pouder.

This made him void bilious matter often, after which he was better. On the *25th.* of *Auguſt*, I took a piece of bone out, of the bigneſs of my little Finger. On the *14th.* of *September*, there appeared another hollowneſs under the Knee, about the forepart of the Patella, which could not be evacuated by the hole above; and therefore I perforated it with the end of the inſtrument covered with Wax, *Tab.* XIV. *Fig.* V. and the matter being evacuated, I agglutinated it with a Spunge preſſed out in Red-Wine and, the Rowler with two Heads. After the agglutination of the hollowneſs, I Cicatrized the Wound in few days by the help of the Ceratum Divinum. So that the Patient on the *4th.* of *October*, could walk without Crutches, and in *December*, went about his buſineſs without any hindrance.

OBSER-

OBSERVATION XCV.

Of a broken Thigh.

ON the 24*th.* of *December*, 1644. *Johanes Krieſinger* a Victualer of *Ulme*, as he was bringing fuell out of the Woods, a Cart laden with Wood, broke, and Wounded his left Thigh, after which he was brought to *Ulme*, where *John Meckenried*, and *George Riedlin*, bound up his Thigh. Upon the 27*th.* upon the great pain and inflammation I was called in, and at my firſt coming to the Patient, I inquired, whether the Wound was made by the broken bone, or by a Billet of Wood, informing them that this was very materiall to know in the Cure of his Thigh, and it might be known by his Breeches, for if they were rent the Wound came from without, if not from within: but there could be no hole found in his Breeches, ſo that it was evident that the Wound was made by the broken Thigh-bone; and therefore I compoſed the Fracture of the extended Thigh, and bound up the whole Thigh with three perforated rowlers that the large Wound might dayly be diſcharged, dipped in a convenient Medicine, (*viz.*) Oyl of Roſes, Roſe-water, and the white of an Egg, ſtirred up together, to mitigate the inflammation, and pain, and layed it into its caſe. On the 28*th.* by reaſon of an unquiet night and bitterneſs in his mouth he made uſe of this thin Syrup.

Take of
Syrup of Roſes ſolutive two ounces.
Extract of Rubarb, four ſcruples.
Diacarthamum, two ſcruples.
Magiſtery of Tartar, one ſcruple.
Succory water, as much as ſufficeth,
Mix them, for a potion.

With which he voided divers times bilious matter. On the 29*th.* The Median vein, of the left Arm was opened, and ſeven ounces of Blood taken away, in the Evening the Patient took a draught of an Emulſion, ſweetned with Syrup of Violets, he paſſed that night very quietly, and the inflammation and pain ceaſed, the inflammation being cured

ted, I procured the generation of the Callus by Ligatures, externall Medicines, and convenient diet, yet the Patient healeth to this day, becauſe being naturally inclined to anger he never held his Leg ſtill in the caſe, but moved it up and down, nor is it to be wondred at, for as I have formerly taken notice of it, Men of any years, although they be very obedient are ſeldome cured of broken Thighs, ſo as not to halt: unles the Thigh be kept Extended by the inſtrument called the Gloſſocomon of *Galen. Tab.* XXI. *Fig.* IV. If not all the time of the Cure, at leſt, while the Patient goeth to ſtool, or the Bed be made.

OBSERVATION XCVI.

Of a Worm on the Head, and convulſion of the Arm.

A Certain Virgin of *Ulme*, of twelve Years of age, upon ſtopping the Bleeding at the Noſe, which ſhe was accuſtomed to, was troubled with an immoderate flowing of the courſes, and that being ſtopped ſhe complained of a Tinea on the Head, and a very troubleſome convulſion of the left Arm, her body being purged by taking often of *Trallianus* his Pills of Salt-Peter, and her courſes returning again, I anointed her Head once every day, with the Liniment of the incombuſtible flax: which I prepared out of *Anelmus Boetius*, his Hiſtory of Stones, and Jewels. *L.* 2. *C.* 204. And anointed the Arm twice a day, with the Oyntment of Eve, or the Polychreſton of *Spigelius*, the deſcription of which may be ſeen. *Tab.* XLIII. And with theſe Oyntments the Patient in a ſhort time was moſt hapdily cured.

OBSER-

OBSERVATION XCVII.

Of the Leproſie of the Greeks.

ON the 17*th.* of *December* 1641. I went with my moſt dear relation the moſt eminent Dr. *Johannes Regulus Villinger*, to viſit a Lady of *Ulme*, who was in ſo miſerable a condition, and had ſo ſad an Aſpect; that I want words to expreſs it ſufficiently. for firſt, ſhe could not ſtand upon her feet, unleſs ſhe were held up by two Maid-ſervants, ſhe looked pale, her Forehead was full of wrinkles and Skales, her Eyes hollow, her Eye-brows bald and ſmooth, her Noſe filled up within with ſcabbes, and covered with ſcurſes and Skales without, her Mouth ſwelled, her Lipps black and blew, her Head hanging down, her Breaſt bent, conſumed away, and beſet about with Scabbes, no Hair under her Arm-pits or upon her belly, her Arms and Leggs lean, and covered with Scales and Scabbs, the topps of her Fingers and Toes had no ſenſe nor felling, by reaſon of a great corroſion, and the thickneſs of the Seabbs, and her whole Body ſent forth a moſt ſtinking ſmell, all the Symptomes being well conſidered, we named this Diſeaſe not an Elephantiaſis, or Leproſie; but *Lepra Græcorum*, or Leproſie of the *Greeks*; and had great hopes to cure it, both becauſe the Patient would ſpare no charges, and would be very obedient, ſhe did ſo earneſtly deſire her health; and therefore we preſcribed there following Ingredients, to purifie her blood.

Take of
The Roots of Polipody of the Oak,
Enula Campana,
Succhory, of each half an ounce.
Of the Leaves of Fumitary,
Speedwel,
Borage,
Spleen-wort,
Dandelion,
Bettony, of each a Pugil.
Senna without the ſtalks one ounce.
Choiſe Rubarb half an ounce.
Trochies of Agarick three drams.

Black

Black Mechoacan two drams.
Roots of black Hellebore a dram and half.
Carthamum-ſeeds four ſcruples.
Ginger,
Cinamon, of each a ſcruple.

Being cut and bruiſed, mix them and put them into a Sack to be infuſed 24 hours in a meaſure of Hony aud Water: of which afterwards let her take ſeven ounces two hours before Dinner, and the third day abſtain from this purging Medicine, and take a part of this Electuary, four hours before Dinner, and three hours before Supper.

Take of
Conſerve of Borage,
Conſerve of Enula Campana, of each ſix drams.
Prepared Pearl,
Red Coral prepared, of each half a dram.
Trochies of Vipers half an ounce.
Syrup of Coral, as much as ſufficeth to make it into an Electuary.
And drink after it, a draught of Clarified Whay, made of Goats milk.

After the repeating of theſe purging Ingredients, ſhe bathed her ſelf an hour in a Bath made of fair water; in which Fumitary, Mallows, Speedwel, and Enula Campana, were boiled: afterwards, her Body being wiped, ſhe anointed her ſelf with this following Oyntment.

Take of
Pomatum two ounces,
Balſom of Peru two drams.
Flower of Brimſtone two drams and a half.
Oyl of Tartar two ounces.
Mix them into an Oyntment.

Upon the uſe of theſe Medicines, the great ſtink, and continual itching of the whole Body remitted, and the Scales fell off from the tops of her Fingers and Toes: for the generating new Fleſh where it was eaten away, in thoſe parts I applied and Oyntment made of the yellow Cerate, and Oyl of Myrtles: the Maid-ſervants anointed her Back with Vipers fat.

She drank a Decoction of China for her ordinary Drink. But here ſome may demand why this Patient, who laboured under a Conſumption of all parts, ſhould make uſe of Vipers Fleſh? to which it may

be

may be anſwered, that ſeeing that Diſeaſes of the whole ſubſtance will not be cured, but by Medicines which work by a ſecret way, and by their whole ſubſtance; and the Leproſie of the *Greeks* being ſuch a Diſeaſe; it will not be cured, but by Medicines, which Act by an occult Propriety, amongſt which, Vipers Fleſh doth not hold the loweſt Rank. On the *6th.* of *January*, 1642. The median Vein of the left Arm was opened, and four ounces of blood taken away: the top of which, appeared white, greeniſh, and putrid; but the bottom black and not concreted, and the Chyrurgion who let her blood, ſaid that he ſmelled a great ſtink when the blood came out. This being done, ſhe made uſe of the purging Ingredients the third time, and the Electuary, to which I added a quantity of Trochies of Vipers.

Take of
- Conſerve of Borage ten drams.
- Trochies of Vipers four drams.
- Red Coral prepared,
- Prepared Pearl, of each half a dram.
- Syrup of Coral, as much as ſuffieth to make it into an Electuary.

Which with great efficacy doth expell the malignant matter from the Center to the Circumference: when the filthineſ abated, the Patient began to ſleep, and drank no longer Whay of Goats-milk. After the taking of the Electuary in a fortnights time ſhe took theſe Pills twice.

Take of
- The maſs of the Golden Pills two Scruples.
- Extract of Cochie Pills half a ſcruple.
- Magiſtery of black Mechoacan ſeven Grains.
- Extract of black Hellebore half a ſcruple.
- With Syrup of Betony, make them up into one and twenty Pills, and guild them.

Which gave her ten Stools; after the ſecond uſing of theſe Pills, the Hair began to grow again upon the Eye-brows, under the Armpits, and elſe where. Things being thus, we forbad the further uſe of remedies, the time of her Courſes being near, and adviſed her for the future if they came down in too ſmall a quantity, or too ſlowly, to promote them with a dram of theſe Ammoniacal Pills

Take of
- Aloe extracted in Endive-water,

Gum Ammoniacum diſſolved in Vinegar of Squills,
Myrhe prepared, of each a dram.
Maſtick,
The Species of the three Sanders's, of each one ſcruple.
Salt of Worm-wood a dram.
Syrup of the Juice of Roſes, as much as ſufficeth.

Mix them into a Maſs for Pills.

With theſe remedies the Lady recovered her former health.

OBSERVATION XCVIII.

Of Oedematous and Eriſipelaslike inflamations.

In inflamations that are both Oedematous, and like to St. *Anthony*'s Fire, which for the moſt part invade the Limbs, and are often very troubleſome, both to Phyſitians, and Chyrurgions, I never experienced any thing better, than this following remedy, which a *German* Chyrurgion, communicated to the moſt excellent *Spigelius*, for a rare ſecret, and ſo certainly it was.

Take of

The Lye of the Aſhes of Vine Branches one pint.
Salt-Peter a dram and half.
Common Salt an ounce.
The beſt Wine Vinegar an ounce.

Mix them

And after general remedies; dip a double Linnen Cloath in this luke-warm, and apply it to the Part affected, binding it on with Rowlers: this doth wonderfully drink in, and diſcuſs, in three or at moſt, in four days time, great dangerous ſwelling, threatning mortifications.

OBSERVATION XCIX.

Of the Shin bone corrupted, and ſcraped with the ſcraping Irons.

A French Soldier who had been troubled with a Virulent Gonorhea, which was unſeaſonably ſtopped by injections, fell afterwards

wards from his Horſe upon the Stones ſo as the Skin came off of his Legg. This Ulcer being dreſſed with ordinary Medicines became malignant and corroded the Shin-bone, for the cure of which I propoſed a ſudorifick courſe, and that being finiſhed I made an inciſion with my Knife, right down the Legg, and dilated the Wound with aſtringents, and then ſcraped the Bone with the ſcraping Irons, and covered it with Cephalick Powders. I incarnated the Ulcer with the yellow Oyntment, which doth moſt excellently aud wonderfully well in corroding Ulcers, and Cicatrized it with the noted Cerate, See. *Tab.* XLIII. under the. letter *R* the *Obſervation* of *Martin Smith*, who for ſuch a corroſion of the Legg, and Shin-bone very ſucceſsfully underwent this manner of cure with the ſcraping Irons.

OBSERVATION C.

Of a Leproſie taking its Original upon the eating of Leprus fleſh

IN *Autumn* 1637. A Butcher of *Ulme*, in the middle of his journey towards *Vienna*, was entertained at his Inn by an Hoſteſs who was a ſorcereſs, with the boyled fleſh of a Man lately dead of the Leproſy; upon eating of which the whole maſs of his Blood was preſently infected, which ſent out Malignant Boyls to the ſuperficies of his Body, and firſt of all to his Head, and hearing the report that this wicked Woman was burnt publickly for many other and ſeveral offences. he was very melancholly and began to deſpair of the recovery of his health, but leaſt he ſhould ſeem to be wanting to himſelf, he conſulted with a Chyrurgion otherwiſe experienced enough, who not pondering the buſineſs ſufficiently, attempted to reſtore the Patient, but in vain, only with outward Oyntments, till at length he did moſt earneſtly intreat my moſt eminent Collegue Dr. *Johannes Georgius Gockleius*, divers times cited in our *Obſervations*, and from whoſe Communication I had this cure, that he would aſſiſt him in this affair, and try his uttermoſt.

The Dr. according to his uſuall humanity demonſtrating to the Patient and the Chyrurgion, by ſolid reaſons, that without the frequent taking of inward Remedies, and preparing of the maſs of Blood, and depurating of it: the uſe of purgers, and bleeding the diſcuſſing of

the communicated malignity by ſudorificks, the ſtrengthning of the Liver, and at laſt, the orderly anointing of the outward parts, this Diſeaſe, although not yet rooted in, could never be Remedied, the Patient promiſed all obedience in the cure, and the Dr. aſſured him of his care, and diligence and after this manner went about the cure.

Firſt a regular Diet was ordered, Meats of good digeſtion preſcribed, and free from all ſharpneſs as in the cure of the French-Pox; for his drink he ordered a Decoction of Guaicum and Saſſafras to be prepared with Aniſe-ſeeds, and Fennell ſeeds; a ſtronger Decoction, to provoke ſweat: and a weaker to quench his thirſt.

Secondly, he prepared his Body for purgation two days together, with this digeſtive.

Take of

The Syrup of the two opening Roots, an ounce.
Hony of Roſes ſtreyned, half an ounce.
Cream of Tarter powdered, one ſcruple.
Aſparagus water.
Fumitary water, of each two ounces.

Mix them, for one Doſe.

Thirdly, he removed the vitious humours of his Stomoch, by this following Medicine, taken in Wine.

Take of

The beſt Mercurius dulcis, one ſcruple.
Crocus metallorum, ſix grains.
Cambogium, ſeven grains.

Mix them. into a powder

Fourthly, he ordered the Median Vein of the right Arm to be opened, and five ounces of Blood to be taken away.

Fifthly, after ſome days reſting he prepared his Body again, four times with this powder in Broth.

Take of

The Tartarum Vitriolatum, powdered half a dram.
Give four Doſes of this at ſeveral times.

Sixthly, he moſt happily proceded to the cleanſing of his Blood with theſe Specifick Pills.

Take of

Crollius his Panchimag. two ſcruples.
Mercurius dulcis, one ſcruple.
Cambogium ſeven Grains.
With Black-cherry water, make them into ordinary Pills, for one Doſe.

Seventh-

Seventhly, he proceeded to Sudorificks in which the Patient being very regular he took dayly in a draught of the ſtronger Decoction of Saſſafras a Doſe of this following.

Take of

The Golden Diaphorætick ſulphur,
From twelve grains to fifteen, Make it into Powder for one Paper.

And for a month together in the Morning keeping his bed for two hours he ſweat very plentifully, except every ſeventh day, when he repeated the taking of the Pills before deſcribed. Eightly, being let blood upon this, the blood which came out of his left Arm was much more pure than the former. Ninthly, the impurity remaining (upon his skin, was wiped off in a ſtove, and his Head was cleanſed with this Lye, made on purpoſe.

Take of

The Roots of Bryony one ounce.
Dock Roots half an ounce.
Leaves of Hore-hound,
Criſp Mint,
Wild Marjeron.
Betony, of each half a handfull.
Camomile flowers.
Roots of Aſarabacca with the whole plant, of each two pugils.
Crude Aggarick half an ounce.
Cut them groſely and boyl them in common Lye.

Tenthly. Some ſores remaining in his Head and other parts of his Body, were healed, and all outward uncleanneſs, was finally taken away with this Oyntment

Take of

The white Oyntment with Camphir one ounce.
Mercurius Dulcis two drams.
Grind them well together, and put them into a Pot.

So by the Divine favour, the Patient very well known to me, was in ten weeks time moſt happily reſtored: he continued the uſe of the Decoction of Saſſafras for his ordinary Drink for ſome time, and the Diſeaſe never broke out again in the leaſt, all the days of his life.

FINIS.

THE TABLE OF THE OBSERVATIONS.

A page

An Apoplexy upon breeding Teeth 279.
Atheroma cut out of the Forehead. 147.
An Atheroma on the outside of the Leg cured. 367.
St. *Anthonie's* fire. 343.
St. *Anthonie's* fire Ulcerated. 345.

B

A Broken Thigh. 381.
The bringing forth of a dead Child. 252.
Blood Vomited up mortal. 348.
Barrenness from a rupture ill reduced 343.
A broken Leg with a Wound 364.

C

A Contusion of the Head causing Death an hundred days after, by omitting the use of the Trepan. 243.
A contusion of the Brain the ninth Week destructive. 244.
A contusion of the Head upon which hapned a Vertigo, and an Apoplexy. 248.
A contusion of the Head causing convulsions at the New-moon. 254.
A Convulsion of the Eye from a concussion of the Brain. 260.
A Callous hollowness and corruption of the Pallate-bone. 270.
A Contusion on the hinder part of the Head helped by the scraping Irons. 287.
A Cancer of the Breast cut off with the Knife. 319.
A Cancer in the Breast ill cut off. 326.
A Cancer in the Breast discussed. 327.
The Corrosion of the Stomach healed. 353.
Chilblains and Kibes Ulcerated. 360.

Cancets

Cancers incurable proceeding from Obstructions of the Gall. 338.
A Concussion of the Brain. 370.
A Convulsion of the Arm and Worm on the Head. 382.

D

A Depression of the Skull with a pricking of the Dura mater. 247.
A Depression of the Skull of a Woman with a fissure. 286.
A dead Child brought forth. 352.

E

AN Excrescence of flesh on the roof of the Mouth. 270.
An Empyema in the Breast cured by opening it. 304.
An Empyema evacuated by Urine. 305.
An Empyema cured by Diureticks. 315.
Excrescences of flesh. 359.
An Erysipelas or St. *Anthonie's* fire. 343.
An Erysipelas Ulcerated. 345.
An Excrescence on the the Thigh. 376.

F

THe Fundament not sufficiently perforated. 351.
A Fistula in the right Breast, 350.
Fleshy Rupture or Hernia carnosa. 349.
A Fracture of the Thigh-bone with a Wound. 361.
Fleshy excrescencies. 359.
A fistula in the Breast cured by corrosives. 307.
A Fistula in the Breast perforated with a Needle. 303.
A Fistula on the Breast with a corrosion of the Clavicula. 288.
Fissures on the head cured in a Boy and a Man. 287.
A Face Burnt with Gun-powder. 282.
A Fissure and depression of the inward Table of the Skull the outward being sound. 251.

G

A Gunshot Wound on the lower Jaw. 275.
A Gutta Serena or blindness cured by a Seton. 283.
A Gutta Serena of both the Eyes incurable. 285.
A Gunshot Wound in the Back. 330.
A Gunshot Wound with a Gangrene. 344.
A Gonorrhea Virulenta. 352.
A Gunshot Wound with a broken Leg. 377.

H

A Hand cut off for a Spina Ventosa. 373.
A Herpes Miliaris corroding. 345.
A Hernia Carnosa. 349.

K

KIbes and Chilblains Ulcerated. 360.
The Kings evil covering the whole Neck. 280.

L

A Leg broken with a Wound. 364.
The left Shoulder-blade corrupted. 339.
The Leprosy of the Greeks. 383.
A Leprosy from eating Leprous flesh. 388.

M

A Meliceris in the Shoulder and Knee. 342.

N

A Nerve pricked, 341.
A Node Venereal cured by Chyrurgery. 341.

O

Oedematous Tumours. 347.
Oedematous and Eryſipelas-like Tumours. 386.

P

A Periodicall pain of the teeth moſt happily cured. 278.
The pains of a Cancer mitigated. 328.
A pain and Ulceration of the Breaſt mitigated by an Iſſue. 329
The Pricking of a Nerve. 341.
The Piles relapſed into from the uſe of Scammony. 351.

Q

A Quinſy very dangerous cured. 282.

R

A Rupture fleſhy or Hernia Carnoſa. 349.
A Rupture ill reduced cauſing barrenneſs. 343.
A repalſe into the Piles from the uſe of Scammony. 351.

S

THE Shin-bone corrupted ſcraped with the Scraping Irons. 387.
Scammony cauſing a repalſe into the piles. 351.
A Stone taken out of the Urinary paſſage without Probe or Inciſion. 340.
The Shouldertblade corrupted. 339.
A Spina Ventoſa. 364.
A Steatoma on both Hands, 360.
A Shin-bone corrupted. 354.
The Stomach corroded. 353.
The String of the Tongue ill broken with the Nails, 279.
A Swelling with a bag cut out of the upper Jaw. 265.

T

A Thruſt into the Skull, penetrating both the Tables. 255.
A Tumour in the upper Jaw contained in a Bag. 271.
The Thigh bone fractured with a Wound. 361.
Tumours Oedematous. 347.
The Thigh fractured. 381.

V

A Virulent Gonorrhea. 352.
Vomitting Blood Mortal. 348.
An Ulcerated Eryſipelas. 345.
A Venereal Node cnred by Chyrurgery. 341.
An Ulceration in the Breaſt mitigated by an Iſſue in the Thigh. 329.
An Ulcerated Cancer of the Breaſt cut off with the Knife. 319.
A Venereall excreſcence of fleſh in the Noſe. 284.
A Vertigo in a ſheep from an Abſceſs in the Brain. 247.

W

A Wound on the Head with a depreſſion and large fiſſure of the Skull. 225.
A Wound on the Head with an inflammation of the Pericranium, and a doubtfull fiſſure of the Skull. 230.
A Wound in the Temporal muſcle with a very large cleft in the Skull, and inflammation in the Dura mater. 232.
A Wound dividing the Fore-head-Bone cured by the Trepan, 234.
A Wound on the Head with a very great depreſſion of the Skull. 235.
Another Wound on the Head with a very great going in of the Skull. 238.
A Wound on the Head with an Inciſion of the Falx, Dura mater, and Pia mater. 250.
A Wound on the Head cured by the Trepan, after twenty eight Weeks. 251.
A Wound on the Head mortal upon drinking Wine after the opening of the Skull. 252.
A Wound on the Head and the outward table cut away. 255.
A Wound on the Head with two Fungi mortal. 256
A Wound on the Eye made with the end of a Spindle. 259.
A Wound and Fracture of the Noſe. 262.
A Wound on the Breaſt with a fracture of the Rib. 290.
A Wound on the Breaſt dangerous. 293.
A Wound on the Breaſt requiring the Paracenteſis. 299.
A Wound on the Breaſt penetrating through the midriff, into the bottome of the Stomach. 305.
A Wound on the Breaſt dilated with the Knife. 308.
Another Wound on the Breaſt dilated with the Knife. 309
A Wound on the Groin and Yard by a Bullet. 322
A Wound on the Breaſt mortal upon neglecting the Paracenteſis. 336.
A Wound on the Wriſt hurting the Artery. 368.
A Wound on the Arm dangerous. 374.
A Worm on the Head, and Convulſion of the Arm. 382.

Y

The Yard taken off. 337.

A TABLE OF THINGS REMARKABLE.

A

AN Ægylops cured, *Tab.* 33. *Fig.* 3, & 5.
An Ancyloblepharon cured, *Tab.* 33. *Fig.* 2.
The Apparatus for Dilating Wounds on the head, *Tab.* 30, 31.
The Apparatus for Perforating the Skull with the Trepan, *Tab* 31. *Fig.* 1.
The Apparatus for making an Iſſue on the top of the head, *Tab.* 30. *Fig.* 1, & 7.
The Ankle-bone Diſlocated how reduced, *Tab.* 25. *Fig.* 1.
An Atheroma cut out of the forehead, *Tab.* 35. *Fig.* 2, & 4.
An Arm out of joint, how to be ſet, *Tab.* 23. *Fig.* 2. & *Tab.* 24. *Fig.* 1.
The Application of the Tunnel, *Tab.* 36. *Fig.* 3.

B

BArly Water, 226, & 294.
Bandage to be brought round, *Tab.* 28. *Fig.* 18. in the Leg.
Bandage brought round, *Tab.* 27. *Fig.* 10.
Bandage croſs-wiſe, *Tab.* 28. *Fig.* 10. in the thigh.
Bandage after Amputation, *Tab.* 28. *Fig.* 1, 2, 3.
Bandage for an Iſſue on the Head, *Tab.* 30. *Fig.* 6.
Bandage for an Iſſue in the Arm, 217.
Bandage for an Iſſue in the Thigh, 218.
Bullets taken out of Wounds, *Tab.* 43. *N.*
A Breaſt cut off for a Cancer, 38. *Fig.* 1.
Bones pricking the Membranes of the Brain, broken off with Pincers, *Tab.* 32. *Fig.* 3, 4, 5, 8.

The

The Breasts of those who give suck drawn out, *Tab.* 37. *Fig.* 6.
The Back-bone slipped outward, reduced, *Tab.* 25. *Fig.* 2.
Bolsters, 86.
The Betony Oyntment, 241.

C

A Caruncle in the Urinary passage, extirpated, *Tab.* 40. *Fig.* 5.
A Cataplasm to take off an Eschar, *Page* 48.
A Cataplasm against Inflammation of the Eyes, 265.
The Cerate of the *Duke of Tuscany*, 219.
The Cerate Astringent, 182.
The Ceratum Diasinapi or of Mustard, 212.
The Ceratum Citrinum, 213.
The Cerate for Nodes in the French Pox, 223.
The Ceratum Divinum, 242.
The Cerate of *Hippocrates* of Roses, 77.
The Ceratum Oxelæum, 320.
The Cerate of *Joannes Prævotius*, 327.
The Clitoris cut off, *Tab.* 41. *Fig.* 1.
Contusions on the head of divers kinds 125, 126, 128, 129.
A Contra-Fissure of the Skull, 131.
A Cancer of the Breast cut off, *Tab.* 38. *Fig.* 1.
The Cauterizing of the Nostrils, *Tab.* 37. *Fig.* 1.
The Cauterizing of the hinder part of the head.
A Cataract couched, *Tab.* 33. *Fig.* 3, 4.
A Cataplasm excellent against a Gangrene, 345.

D

OF Dislocations, and their Cure in General, 73.
Of a single or simple Dislocation, 74.
Of the five Intentions in the cure of a Dislocation, *viz.* 1. Extension. 2. Reposition. 3. Deligation. 4. Deposition. 5. Religation, 73, 74, 75.
Of a Dislocation with Inflammation, 79.
A Dislocation with a Wound and the bone uncovered, 81.
A Dislocation with a Convulsion, 81.
A Dislocation with a Callus, 82.
A Dislocation after it is reduced, that slips again, 83.
A Dislocated hand reduced, *Tab.* 24. *Fig.* 2.
The Depression of the lower Jaw, *Tab.* 36. *Fig.* 7.
The Decoctum Divinum, 258.
The Decoctum Magistrale, 207.
The Dead Child drawn forth, *Tab.* 41. *Fig.* 5.
The Depression of the Skull, with a broad rift in the middle, 129.

A Depreſſion of the Skull, with a narrow crack in it, 130.
A Depreſſion of the Skull, with a crack on the ſide of the Depreſſion, 130.
The Diſtance between the holes in the Skull, cut away with a Saw, *Tab.* 32. *Fig.* 1.

E

EXcreſcencies large, their general Cure, 148.
The upper Eye-lid contracted, how cured, *Tab.* 35. *Fig.* 4.
The upper Eye-lid relaxed, how to be cured, *Tab.* 35. *Fig.* 3.
The Eye faſtned with a Ring, *Tab.* 33. *Fig.* 6.
An Electuary for a Rupture, 183.
The Elongation of a joynt, *Page* 84.
Extention neceſſary in Diſlocations, and Fractures, 74, & 84.
An Electuary for the Kings-Evil, 281.

F

THe Fundament inſpected, *Tab.* 41. *Fig.* 6.
The Fundament of Children cloſed, is Perforated, *Tab.* 41. *Fig.* 6.
Ferula, 87 how uſed, 89.
A Fiſtula of the Breaſt creeping under the Ribs, cured by perforating it at the bottome, *Tab.* 38. *Fig.* 5.
An outward Fiſtula of the Breaſt cut, *Tab.* 39. *Fig.* 2
A Fiſtula in the Fundament penetrating, cured, 199.
A Fiſtula in the Fundament not penetrating, cured, 202.
Of Fractures, the general Cure, 84.
Fractures ſimple, tranſverſe and oblique, 84.
A Fracture, how to be compoſed, 86.
A Fracture ſet, how to be bound up, 89.
A Fracture bound up, how to be placed, 90.
A Fractured part, how to be unbound, 90.
A Fracture right down, or a ſhingle Fracture cured, 94.
A Fracture with a ſimple Wound, 95.
A Fracture with a wound, in which the bone is not naked, yet a great piece of the bone is expected to come off, 97.
A Fracture with Wound wherein the bone is made naked, yet it doth not ſtick without the Wound, 99.
A Fracture with a Wound where the bone ſticks out of the Wound, 99.
A Foot cut off, *Tab.* 27. *Fig.* 15.

G

A Glyſter to be given to ones ſelf, *Tab.* 42. *Fig.* 8.
A Gargariſm for a Quinſie, 282.
The Gut called the right Gut fallen down put up again, *Tab.* 41. *Fig.* 7.

H

HÆmorrhoides that ſwell, curred by manual operation, 201.
Hæmorrhoides running too much, cured manually, 202.
Hæmorroides ulcerated, cured by Inſtruments, 204.
The Hymen hindering Coition, cut, *Tab.* 40. *Fig.* 15, 16.
A Hand out of joint, reduced, *Tab.* 24. *Fig.* 2.
A Hare-lip cured, *Tab.* 35. *Fig.* 8.
The Holes made with the Trepan, ſmoothed, *Tab.* 31. *Fig.* 7.
Herticius his Pills for pain of the Teeth, 278.
Hairs which hurt the eye, pulled out, *Tab.* 35. *Fig.* 2.
A Hand cut off, *Tab.* 27. *Fig.* 11. 12.

I

ISſues where to be made on the head, *Tab.* 32. *Fig.* 2.
Iſſues where to be placed in the Arm, *Tab.* 43. F.
Iſſues where made in the thigh, *Tab.* 43. I.
An Iſſue in the legg, *Tab.* 43. K.
Injections into the ears dangerous, *Tab.* 36. *Fig.* 5.
The Inſpection of the Matrix, *Tab.* 41. *Fig.* 4.

K

THe Knee out of joint, how to be reduced, 64.

L

A Leg broken, how bound up, *Tab.* 29.
A Liniment excellent againſt Caruncles in the paſſage Urine, 190.
A Liniment for burnt places, 283.
The Linimentum Simplex, 320.
A Liniment for Kibes and Chilblains ulcerated, 360.
Lizard Oyl, 281.
The Lime-water moſt excellent, 347.

M

THe Middle poſture of the Arm and Leg, *Tab.* 7 *Fig.* 2, 3.
The Matrix inſpected, *Tab.* 41. *Fig.* 4.
The Meeting of the Coronal, and Sagittal Sutures how to be found, *Tab.* 30. *Fig.* 2.

N

NOdes in the French Pox, how Cured, 222.
The Neckbone out of joint, reduced, *Tab.* 24. *Fig.* 3
The Noſtrils Cauterized for an Ozæna, and after the Polypus is drawn out, *Tab.* 37. *Fig.* 1.

The

O

THe Oyntment yellow, or Unguentum Citrinum, 345.
The Oyntment for Wounds of the Nerves, 341.
An Oyntment to conſume the hardneſs of a Fiſtula, 307.
An Oyntment to hinder the breeding of a Callus, 308.
The Oyntment of *Eva*; or *Unguentum Evæ*, 212.
The Oyntment of Betony, 241.
Oyl of Lizards, 281.

P

A Plaſter to ſtop bleeding at the noſe, 123.
The Paracenteſis of the Belly, *Tab.* 39. *Fig.* 2, 3.
The Paracenteſis of the Breaſt *Tab.* 37. *Fig.* 2, 3, 4.
The Perforatron of the Yard, having no hole, *Tab.* 40. *Fig.* 6.
The Pills of *Herlicius* for pain of the Teeth, 278.
Pills to provoke the Terms
A Polypus pulled out, *Tab.* 33, *Fig.* 7.
A Pterygium cured, *Tab.* 35. *Fig.* 6.
A Powder for Parts galled, 328.
A Powder for fleſhy Excreſcencies, 359.
A Pouder for the Teeth, 359.
Prick on the Skull taken away with the Piercer, 132. *Tab.* 33. F. 1.
Pectoral Trochies with Musk and Amber, 282.

R

THe reducing of the Back-bone ſlipped outward, *Tab.* 25. *Fig.* 2.
The reposing a member Fractured, or Diſloacated into its caſe, *Tab.* 2 *Fig.* 2, 3.
The Rig[illegible] gut fallen down, reduced, *Tab.* 41. *Fig.* 7.
The Rupt[illegible] of the Navil, *Celſus* his way of Cure, *Tab.* 33. *Fig.* 7.
Rupture of [illegible] Navil, *Fabritius* his milder way, *Tab.* 38. *Fig.* 8. *Tab.* 39. *Fig.* 1
The Rupture [illegible]he Guts, the *Nurſine* way of Cure, *Tab.* 40. *Fig.* 8. to the 14*th.*
The Rupture of t[illegible] Inteſtines, a milder Cure, *Tab.* 38. *Fig.* 6, 7, 8.

S

SHarpneſs of Urine, [illegible]tigated, *Tab.* 40. *Fig.* 4.
Stone in the Bladd[illegible]earched for, *Tab.* 40. *Fig.* 1, 2.
Stone in the Urinary pa[illegible] taken out, *Tab.* 40. *Fig.* 3.
The Skull Perforated with [illegible]epans, *Tab.* 31. *Fig.* 5.
The Skull being depreſſed, [illegible]w it is raiſed again, *Tab.* 32. *Fig.* 2, 7.
The Scraping of the Skull fo[illegible] Fiſſure, or Corroſion, *Tab.* 30. *Fig.* 10.
The Skull, part of it chopped [illegible]ay, 130.

Splents

Splents, 87, how to be uſed, 89.
The Shoulder-bone out of joint, reduced, *Tab.* 21. *Fig.* 7. *Tab.* 23. F 3.
The Shoulder-bone broke, compoſed, *Tab* 23. *Fig.* 1.
A Seton burnt in the tip of the ear, *Tab* 34. *Fig.* 6.
A Seton burnt in the nape of the neck, *Tab.* 34. *Fig.* 8, 9, 10.
A Sparadrap for Iſſues, 219.
Spirit of Maſtick, 273.
Sutures Coronal, and Sagittal, how to know where they meet, *Tab.* 30. *Fig.* 2.
A Suffuſion cured by the Needle, *Tab.* 33. *Fig.* 3, 4.
A Staphyloma cured, *Tab* 35. *Fig.* 5.
Symptomes happening upon Fractures, amended, *Page* 92, 93.
Symptomes happening upon a Rupture of the Inteſtines, 180, 181.
The Scraping of the Shin-bone, 90. Where note, that the lips of the Wound are to be covered over with Linnen, as in the ſcraping of the Skull, *Tab.* 31. *Fig.* 5.
Suppreſſion of Urine helped, *Tab* 39. *Fig.* 9.

T

THe Tuty Oyntment, 209.
Tumours contained in Coats, how cured, 147, 148.
A Tumour in a Bag, broke with a Diamant, *Tab.* 33. *Fig.* 7.
A Thumb cut off, *Tab.* 28. *Fig.* 12.
The Tunnel applyed *Tab.* 36. *Fig.* 3.
The Taking out of things ſtiticking in the Throat, *Tab.* 36. *Fig.* 9.
A Tooth hurting the Cheek, cut out, *Tab.* 36. *Fig.* 2.
Teeth, how pulled out, *Page* 25.
Teeth that are rotten, how burned, *Tab.* 36. *Fig.* 1.
Teeth ſet faſt in the head, how opened, *Tab.* 36. *Fig.* 6.
A Thigh out of joint, Reduced, *Tab.* 23. *Fig.* 4.
A Thigh broken, ſet again, *Tab.* 26. *Fig.* 1.
The Tapping of the Belly, *Tab.* 39. *Fig.* 2, 3.
The Tapping of the Breaſt, *Tab.* 37. *Fig.* 2, 3, 4.
Trochies with Musk and Amber, Pectoral, 282.

V

THe Uvula Corrupted, cut off, *Tab.* 34. *Fig.* 1, 2.
Unguentum *Evæ*, or Oyntment of *Eve*, 212.
The Veſſels on the Temples, how found, *Tab.* 33. *Fig.* 2.
Venereal Warts, how extirpated, *Tab.* 40. *Fig.* 7.
Ulcers in the right gut dried up with Pipes, *Tab.* 41. *Fig.* 8.
Urine ſuppreſſed, drawn out, *Tab.* 39. *Fig.* 9.

W

The Wind-pipe perforated, *Tab.* 34. *Fig.* 3, 4, 5.
Warts on the Yard in the French Pox, how cured. *Tab.* 40. *Fig.* 7.
Wounds on the Belly, 169.
Wounds on the Belly dilated, *Tab.* 37. *Fig.* 5.
Wounds on the Belly ſewed up, *Tab.* 39. *Fig.* 5.
Wounds in the Guts ſewed up, *Tab.* 37. *Fig.* 6.
Wounds on the head Dilated in the ſhape of a Triangle, *Tab.* 31. F. 2.
Wounds on the head Dilated croſs-ways, *Tab.* 30. *Fig.* 9.
The Womb fallen down, Reduced, *Tab.* 40. *Fig.* 18.
Wounds of the head, of all ſorts, 111.
A Wound on the head, the moſt ſimple, 113.
A Wound on the head, with hurt done to the Pericranium, 113.
A Wound on the head, with alteration of the Skull, 113.
A Wound on the head, with a capillary Fiſſure, not penetrating, 115.
A Wound on the head, with a capillary Fiſſure, penetrating, 117.
A Wound on the head with an evident, yet narrow crack in the Skull, 118.
A Wound on the Head, with a Fiſſure in the Skull, large, and penenetrating, 121.
A Wound on the head, where the Dura Mater is hurt alſo, 122.
A Wound of the head, where the Pia Mater is hurt, and the ſubſtance of the Brain, 122.
A Wound of the Temporal Muſcle, hurting the Pericranium, and the Veſſels, 123.
A Superficial Wound of the Temporal Muſcle, 124.
A Wound of the Temporal Muſcle, with a narrow chink of the Skull, 124.
A Wound of the Temporal Muſcle, with a large Fiſſure of the Skull, 125.
Wounds in the Breaſt, 162, 163.
A Wound in the Breaſt Dilated, *Tab.* 37. *Fig.* 5. E.
A Wound in the Thigh united with loops, *Tab.* 45. P.
A Wound on the Cheek united with Emplaſtick Linnen Cloaths, *Tab.* 35. *Fig.* 8.
The Womb opened, *Tab.* 40. *Fig.* 17.

FINIS.